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With Which Is Combined

PAPER

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U. S. Ownership of Canadian Paper Industry

Dominion Bureau of Statistics Estimates American Capital Employed in Canada's Pulp and Paper Industries At Between $315,000,000 and $360,000,000—American Ownership Estimated At Approximately 40 Per Cent of Total Holdings—Total Capital Employed Estimated at $1,200,000,000.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 6, 1933—That American ownership of the Canadian pulp and paper industry is estimated at something around 40 per cent is the information made public by the Dominion Bureau of Statistics, in response to inquiries from Montreal. The total capital employed is set down at $1,200,000,000, this estimate including not only pulp and paper mills, but all paper industries of any kind, including paper boxes and bags, lithographing, publishing and so forth.

Of the total the outside capital is between $350,000,000 and $400,000,000, American holdings being between $315,000,000 and $360,000,000 and holdings in Great Britain between $35,000,000 and $40,000,000.

New Fiber Box Plant

Information given out here is to the effect that Pacific Mills, Ltd., has completed a $150,000 expansion program providing facilities for manufacturing solid fiber boxes. New equipment has been installed at the company's Ocean Falls and Vancouver plants; kraft mills at the former have been altered to permit manufacture of fiber board and a converting plant has been erected in Vancouver to make the fiber containers. Production will be started immediately, it is reported.

Pacific Mills is the Canadian operating subsidiary of Crown Zellerbach Corporation one of the largest news print manufacturers in the United States and a substantial factor in the Pacific Coast and Mid-West trade. The Canadian company ends its fiscal year April 30; in the last period net profit after bond interest depreciation and taxes was $215,904. This was slightly more than half that shown in the previous report; surplus was $97,970 after payment of preferred dividends. Total surplus was increased to $6,282,968.

Electric Steam Boilers

Just how important the electric steam boiler is becoming as an outlet for the surplus power of hydro-electric plants is shown by the annual report of the Shawinigan Water and Power Company, which states that of the total power output of 3,266,815,903 k.w. hours in 1932, 974,173,453 k.w. hours were sold as secondary power. Explaining the use of secondary power, the report states:

"The income from the pulp and paper industry was received in two divisions, one from primary contracts which amounted to $4,131,199 and the other from secondary power sold for steam purposes amounting to $546,525. This latter item is comparable with $456,495 in 1931. Under the original primary power contracts with the paper companies all of the power contracted for must be paid for as such, and none of this power was to be diverted to secondary use for production of steam. The state into which the paper industry has fallen through over-development has caused your company to allow part of the primary power sold for the purpose of manufacturing paper to be used for producing steam. If this permission had not been granted to the paper companies, the return from secondary power during the year would have been considerably increased over the figures above given."

The cost to the consumer of steam generated by electric boilers is based on the cost of coal in relation to its b.t.u. value.

The introduction of this type of boiler has been the means of opening up a market which, for the time being at any rate, promises to absorb a large and increasing amount of power. The Shawinigan Water and Power Company installed electric boilers of about 120,000 kilowatt capacity in 1932. Gatineau power, Ontario Hydro, Duke Price and other companies have followed Shawinigan's example.

Paper Exports to Japan Increase

A. K. Doull, assistant trade commissioner for Canada in Japan, reports that Canadian exports to Japan in 1932 amounted to 39,504,887 yen, as compared with 35,672,842 yen in 1931. Imports to Canada from Japan in 1932 amounted to 8,562,081 yen, a decrease of 4,505,055 yen as compared with the previous year. Chief among Canada's exports to Japan were news print, lead, zinc and wheat. News print was valued at 3,497,361 yen, an increase of 2,343,197 yen. Exports of paper pulp amounted to 30,067 short tons valued at 3,144,112 yen as compared with 54,728 short tons valued at 5,200,145 yen in 1931—a large decrease in quantity and value. Canada still maintained her position as the largest (quantitative) exporter of pulp to Japan, although the value of Norwegian pulp was slightly greater. The value of lumber exports to Japan amounted to 7,346,836 yen as compared with 7,776,948 yen, a decline of 430,112 yen.

Chicago Paper Market Still Marking Time

Demand for Various Standard Grades of Paper Continues Slow, With Price Situation Irregular —Fine Paper Section Rules Spotty and Uncertain—Kraft Wrapping Paper Division Unchanged—Paper Board Industry Benefits From Jig-Saw Puzzle Craze.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, ILL., March 6, 1933—The business pause, felt throughout the entire United States, and caused by a seemingly universal desire to wait and see what would happen after the inauguration last Saturday, has had a decided effect on paper offices in Chicago and vicinity. The slackness here has caused a large number of sales representatives to get out into the territory in an effort to stir up business. As a result, the "out of town" sign is in evidence everywhere.

As to specific lines of paper, the reports almost universally show a slackening of demand and a slowness which is reflected in a dull price situation. Many of the markets are reported to be bumping along the all time bottom, while others who found it possible to spurt upward have only held those gains. The fine paper market is spotty and uncertain. Some houses are reporting a fair grade of business and there are even instances where volume holds up exceptionally well while others who had booked a considerable run of orders are finding some tendency to cancellation or reduction of original orders.

The kraft market here is reported in a mediocre position. Efforts are constantly being made to hold the market in line and to keep it as firm as possible. The paper board market continues to benefit from the jig-saw puzzle craze and from other new uses. It can perhaps be characterized as at least one of the most satisfactory markets from a local standpoint. News print is hesitant and ground woods are dull. Mills continue to run at a materially reduced rate of output. The paper market here seems ripe for any improvement, however small. Inventories are at rock bottom; over production seems to have been taken up and firms are hoping for the best.

Shirt Board Advertising Planned

Chicago, home office address of the Paperboard Industries Association, is unusually interested in the news that manufacturers of shirt boards are planning to turn these hitherto cast off products into an advertising medium. While the board heretofore used in holding the shape of laundered shirts has been of a very cheap variety, the sponsors of the new advertising idea plan to use forty-ply board with a white finish on both sides. Advertisements will be printed in black or in as high as four colors. This, alone, serves notice that the kind of board used will have to be materially improved over the present flimsy product.

The National Shirt Board Advertising Service has been making plans for launching this advertising service and is ready to put advertising announcements in some 4,982,000 shirts which men in the East will have laundered in March and in subsequent months. The paper board industry, as yet non-committal on this admittedly excellent way to absorb production of certain kinds of paper board, is confident that if the program meets with success in the East, from an advertising standpoint, it is certain to spread over the entire country. In commenting on the program and on its possible effects on the paper industry, one Chicago representative said, "seems as though somebody had an idea. Certain it is that a man will immediately notice a four colored advertisement printed on something so commonplace in his daily life. Naturally, what we are most interested in, is the possibilities of a use of a better grade of board and, thus, another fine outlet for paper board products."

First Cargo Down New Waterway

The paper industry, long interested in the development of the Illinois waterway, will be interested to know that the first boat and the first cargo has traversed the entire route of the new waterway, which is to be formally opened this Spring. The *Chicago Tribune's* boat, the *Sea King*, made the record for the first continuous passage of the sixty mile channel between Joliet and Utica in an opening of the lakes to gulf route, a dream for generations and now actually realized.

The ***Tribune*** boat is continuing on to Cairo, Ill., and to New Orleans. The craft carried consignments of freight for several Illinois cities fronting the newly completed waterway. Estimates are that a barge traffic of between seven and ten million tons a year is available for the waterway in normal times and how fast the commerce develops is expected to depend upon how soon business revives. The *Tribune* boat carried freight consigned to Joliet, Morris, Ottawa, LaSalle, Peoria, Pekin, Beardstown, Alton, East St. Louis, St. Louis, Cape Girardeau and Cairo.

Naturally, the paper industry is interested in the waterway, as it involved the possibility of shipments from the Great Lakes region down the waterway and from New Orleans up the river. The *Tribune's* pioneering job shows, it is said, the tremendous possibilities of paper and pulp traffic, at an evidently lower freight rate and explains why several members of Chicago's paper industry have long been identified with efforts to finally get the waterway in operation. E. M. Antrim business manager of the *Chicago Tribune*, served as general freight agent for the first cargo down the historic route.

Forthcoming Paper Conventions

Chicago will be well fortified with conventions during the next ten days. The first group to come to the city will be the Writing Paper Manufacturers Association which will meet under the direction of Emmett Naylor, Secretary, at the Drake Hotel, on March 8 and 9. The meeting is expected to feature stringent efforts to improve the market situation. On March 10 and 11 the Envelope Manufacturers Association will hold its annual convention at the Congress Hotel and envelope manufacturers from all parts of the country are expected to be in attendance.

Paper Merchants Discuss Problems

The Chicago Paper Association held its regular bimonthly meeting on February 28, at the Bismarck Hotel, The meeting was under the direction of M. A. McNulty, vice president of the Industrial Division of the association. Due to difficulties in collecting the proper information the report of the credit committee, promised for this session, was deferred until a later date.

James S. Danehy, secretary-treasurer of the association, gave a short discussion on the cartage problem and asked for a round table discussion on the comparative advantages and disadvantages of owning delivery trucks and of hiring them.

W. N. Gillett, Chicago Paper Association, was a guest at the meeting and gave an interesting talk concerning the value of organization work. Mr. Gillett is a past president

of the National Paper Trade Association, and an executive in a number of trade associations. His remarks, accordingly, proved very interesting in view of the fact that the coarse paper group only recently affiliated with the National Paper Trade Association.

The majority of the session was given over to a discussion of the price situation and to a frank interchange of ideas as to the business and market situation. Two members of the association, J. S. Danehy, Schwarz Paper Company, and J. T. Daily, Pilcher-Hamilton-Daily Company, are members of the Bag and Twine Committees of the National Paper Trade Association and their report on the recent sessions in New York City will probably be a feature of the next session of the coarse paper group.

Paper Foundation Activities

Phil Howard, managing director of the Paper Foundation, Inc., which seems to be going along at a gait that promises a splendid paper exhibit and scores of well planned individual paper firm exhibits when the Century of Progress Exposition opens up on June 1, has been in Wisconsin most of the past week in the interests of the Foundation. He has spoken at Neenah, Menasha and other Wisconsin cities, finding paper manufacturers unusually interested in the opportunity to secure personal advertising in connection with the composite paper exhibit without a large individual booth expense.

Letters continue to go out from Foundation headquarters in the Conway Building, calling attention to these units—not more than two of which can be sold to any one mill or convertor. One allottment of space includes some very advantageous cabinet or show case space and individual attention to requests for information from the millions of visitors. The Paper Exhibit itself becomes more and more assured as the individual units, of course, help to finance the general composite exhibit in the Graphic Arts Building.

Crown Willamette Shows Profit

Crown Willamette Paper company and Crown Zellerbach corporation showed a drop in their consolidated net income for the nine months ended January 31, 1933, according to an official report. However, both companys had net incomes instead of losses as reported by the larger corporations this year.

The Crown Willamette reported consolidated net income of $243,850, after deducting interests of minority stockholders, but exclusive of profit on the company's own bonds purchased for redemption. This was equivalent to $1.21 a share on the 200,000 shares of first preferred cumulative stock outstanding and compared with earnings of $1,915,464 in the same period a year ago.

In its consolidated statement, Crown Willamette and its subsidiaries, including Pacific Mills, Ltd., showed profit for 1933 of $3,403,481 as compared with $5,556,476 in 1932. Deductions totaled $3,175,996, which left net profit before deduction of interests of minority stockholders of $227,485, as against $1,951,228 last year. With minority stockholders interest in losses of Pacific Mills, Ltd., added the net income was $243,850.

Crown Zellerbach for the same period, set their consolidated net income at $36,848, under the same deductions as Crown Willamette. This compared with a net income of $1,136,793 for the identical nine months in 1932.

Profit for the period was $4,618,595, compared to $7,316,998 in 1932. After the usual deductions, which totaled $4,354,607, net profit before deduction of interests of minority stockholders was shown to be $263,989. From this was subtracted $227,141, interests of minority stockholders which left the net income of $36,848.

The "Why" of Foamy Casein

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 8, 1933.—Why some makes of casein cause foam in applying clay coatings to paper is a mystery that must be solved before much progress can be made in efforts to increase the volume of production and value of domestic casein. This is the conclusion reached as a result of cooperative research by the Bureau of Dairy Industry and the Bureau of Standards.

The chief use of casein, which is briefly the washed and dried curd from soured milk, is as the adhesive for clay and other mineral coatings that form the excellent printing surfaces on paper intended for half-tone work and other high-grade printings. Mineral-coated paper is expensive, and considerable waste results if the casein is not of uniform and high quality. The Bureau of Dairy Industry is endeavoring to minimize waste in both the dairy and paper-coating industries by obtaining more exact knowledge of the essential coating properties and of the best ways to obtain them.

As a preliminary step, samples of representative domestic caseins were given exhaustive laboratory tests by the Bureau of Dairy Industry, and the services of the bureau were enlisted to secure experimental coating tests of the caseins in the paper mill. Finally, tests of the printing quality of the different coatings were made by the Government Printing Office.

The coating quality of the caseins, while generally good, was found to vary considerably. But estimation of their coating quality by laboratory tests appears to be an elusive matter, for, although all of the tests commonly used by paper coaters and several in addition were employed, neither the chemical nor the physical properties tested bore much relation to the major differences in coating quality found. The chief defect found in using the caseins was that some of them caused foam in the coating mixture of casein, clay, and water. Foam results in a mottled coating which is entirely unsuitable for use. Furthermore, foaming tendency apparently bore no relation to the method of making the casein or to the coating procedure employed. Another unexplained fact in this connection, which is utilized commercially and which occurred in these experiments, is that when caseins that cause foam are mixed with those that do not, the blend usually yields satisfactory coatings.

The need for suitable standards of quality for casein evidenced by the results of this study is reflected in responses to inquiries on the subject addressed to paper coaters, because for nearly every positive statement made by one paper coater there is a contradictory statement by another. Further effort is to be made to develop such standards, with particular attention to the chief stumbling block —the "why" of foamy casein.

Corinth Mill Resumes Operations

[FROM OUR REGULAR CORRESPONDENT]

CORINTH, N. Y., March 6, 1933—Full time operations were resumed this week at the local branch of the International Paper Company and a crew of about 700 hands will be employed steadily. The plant produces colored print and specialty papers and is regarded as the principal industry in this section. Operations were halted a few weeks ago when the mill was closed for temporary repairs and improvements.

Among the improvements made were repairs to the huge water wheel used by the mill for power drive and the machines in use were connected with electric current. It is understood that only a few machines are not in operation and it is probable that these will start in the near future.

Demand for Paper Rather Spotty In Ontario

Irregular Request Experienced for Ledgers and High Class Bonds—Sulphite Bonds Reach High Degree of Excellence—Book and Offset Papers Continue Fairly Active—Manufacturers of Paper Operating Plants From Four to Five Days Weekly

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, ONT., March 6, 1933—Spotty conditions continue to mark the wholesale paper trade in Ontario and business generally, particularly in some lines of fine papers, can only be described as dull. Manufacturing concerns, for the most part, are operating their plants from four to five days a week and it is no easy matter these days to keep the flow of orders to the mill at a point sufficient to keep the machines operating even at the rate mentioned.

Ledgers and high class bonds have been lower in demand during the past few months than since the depression set in, their sale, to some extent, having been affected by sulphite bonds, which have been reaching a high degree of excellence. Book and offset papers are in fair demand considering the times but coated stock continues to fall off in sales volume. There is a fair call for Canadian-made manillas, blanks and blottings and some nice business is being booked in these lines.

One mill manager informed the PAPER TRADE JOURNAL that while there had been some increase in tonnage of fine paper for his mills, there had been a falling off in the smaller requisitions which had been depended upon for fill-ins in manufacturing operations. It was stated that some good orders were in the offing for fine papers as indicated by the large number of enquiries for paper for the more expensive lines of direct advertising. Manufacturers of light weight papers and paper specialities report that sales volume is nothing like what it should be, although they are hopeful of a revival early in the spring.

Jig-saw Puzzles Help Business

With Canada, from coast to coast in the throes of the jig-saw puzzle craze, some nice business has been picked up by paper box manufacturers, board manufacturers and lithographers. It is estimated that there is a weekly output of over half a million puzzles being sold in Canada. In Toronto alone over 100,000 puzzles are being sold weekly, which would work out at $5,000,000 a year if the fad were permanent. Just how long the craze will last is not known but it is believed that interest will not really wane until the warm spring comes. Already, however, big-time retailers in Toronto and other Canadian centres are going "short" on jig-saw and business in that line is showing signs of weakening. In Toronto, the peak demand for the puzzles has already been reached, but in the outlying areas and the East and West volume is still mounting to dizzy figures. In the meantime paper box manufacturers are making hay while the sun shines.

A city distributor ordered 5,000 of one puzzle and sold out; ordered 10,000 more the next week and was cleaned out again and last week he raised his ante to 25,000. In London, Ont., for instance, two firms alone are turning out 30,000 puzzles daily with 450 people employed and a weekly payroll of $7,500. Demand for puzzles from Western Canada has been reaching frantic proportions and the demand has exhausted stocks of raw materials in many cases. Meanwhile it all means good business for the paper box manufacturer, the paper board makers and the lithographers.

W. H. Sherriff Returns to Toronto

Announcement was made at the Toronto office of the Hodge-Sherriff Paper Company this week that W. H. Sherriff, who for the past five or six years has been in the London, England, branch of the firm, was about to sail for Canada to take over the management of the Toronto office in succession to H. F. G. Goldsbrough, who recently resigned and went to England to reside. The Hodge-Sherriff Paper Company are selling agents for the Wayagamack Pulp and Paper Company, Three Rivers, Que., manufacturers of kraft papers and other lines. Mr. Sherriff, the new manager of the Toronto office, is one of the best known paper men in Canada and his return to this country will cause a good deal of satisfaction to his confreres in the pulp and paper business. He was for some time in the Montreal office before coming to Toronto.

Big Printing Order for Toronto

The Ontario paper industry was interested in the announcement this week that for the first time in the history of the Vatican at Rome, authorization had been given for the awarding of a huge printing contract outside of Italy, and that this contract had been let to a Toronto firm, the identity of which will not be disclosed for several weeks. The announcement was made co-incident to the visit to Toronto of the Rev. Monsignor Enrico Pucci, domestic prelate in the Vatican.

The Toronto firm will print, publish and distribute the English version of the Vatican memorial series of books throughout the entire British Empire. The order, running into millions of books, is said to be one of the largest, contracts of its kind ever awarded in Canada. Work on the books will start in a few weeks' time.

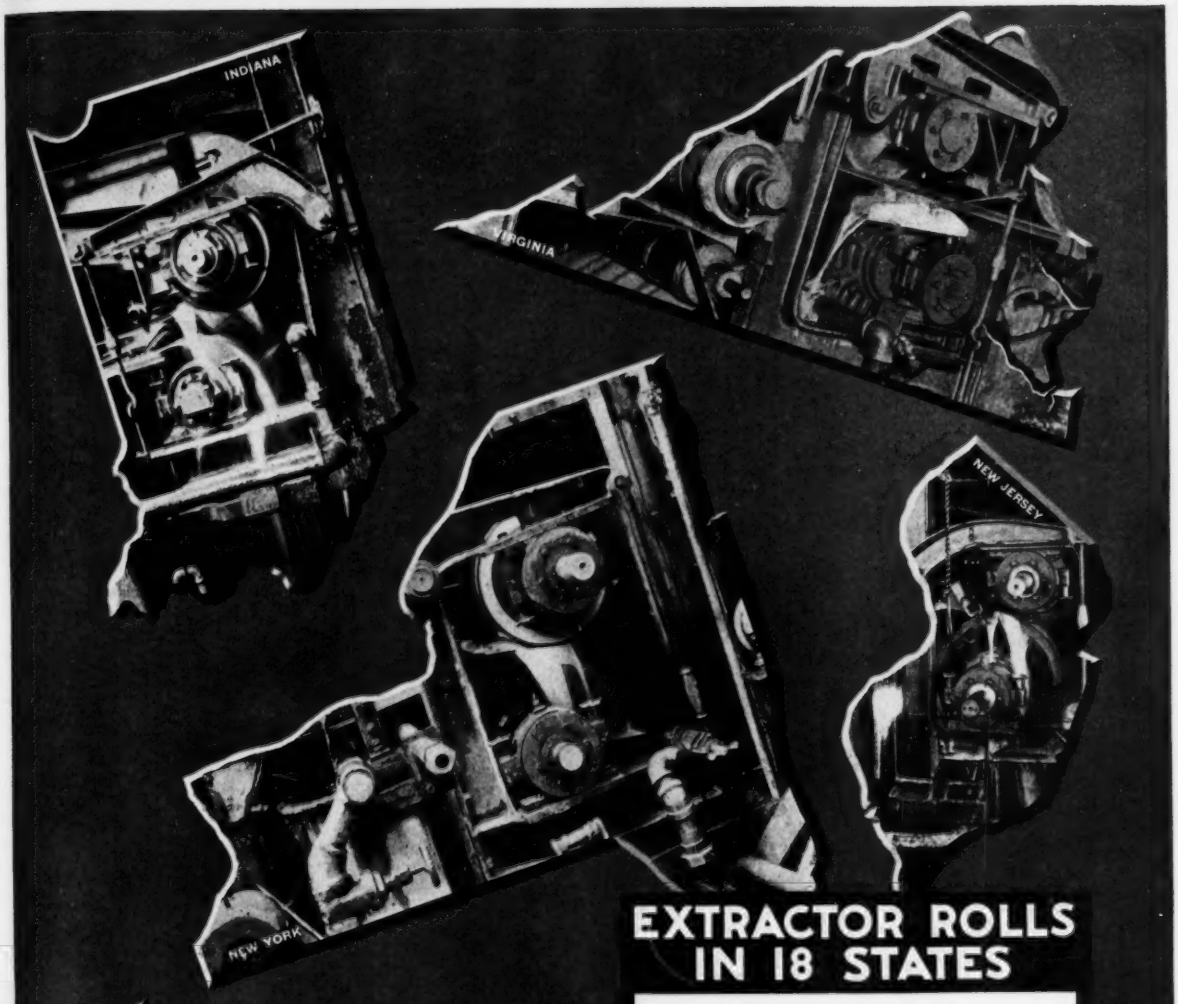
Representing an entirely new project for the Roman Catholic Church, the books are intended, according to Monsignor Pucci, to compensate the many millions of Catholics who will never have an opportunity of visiting the Vatican, and who will gain thereby some idea of its beauties.

Each volume will contain forty fine reproductions of pictures made by Vernon Howard Bailey, a United States citizen who has been doing some outstanding artistic work in Europe. All the paper, labor and other material will be supplied locally. An order for 1,200,000 post cards, showing scenes in the Vatican, will also be awarded to the Toronto firm, it is expected.

Fiber Box Unit Completed

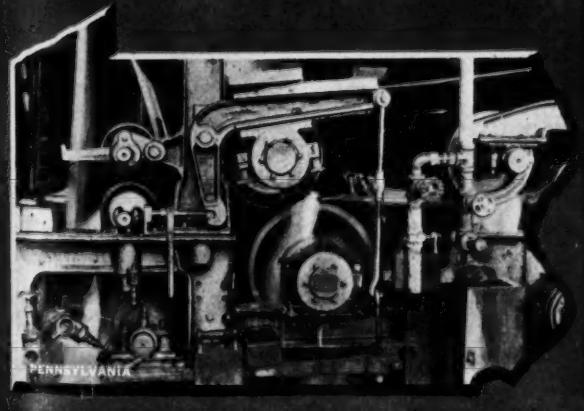
Pacific Mills, Ltd., has completed a $150,000 expansion program providing facilities for manufacturing solid fibre boxes. New equipment has been installed at the company's Ocean Falls and Vancouver plants, while kraft mills at the former have been altered to permit manufacture of fibre board and a converting plant has been erected in Vancouver to make the fibre containers. Production will commence immediately it is stated. Pacific Mills is the Canadian operating subsidiary of Crown Zellerbach Corporation, one of the largest news print manufacturers in the United States and a substantial factor in the Pacific Coast and Mid-West trade. The Canadian company ends its fiscal year in April. In the last period net profit after bond interest depreciation and taxes was $215,904. This was slightly more than half that shown in the previous report. Surplus was $97,970, after payment of preferred

DOWNINGTOWN



EXTRACTOR ROLLS IN 18 STATES

During the past eighteen months, about 60 Downingtown Extractor Rolls have been put in service. Their performance has so revolutionized the making of board, that users feel they are as indispensable as a vat or a felt. The success of the Extractor led us to develop the Downingtown Patent Wet End (Pats. Pend.) If you would like to know what Extractors have accomplished, in mills making board similar to yours, write us. The Downingtown Mfg. Co., Downingtown, Pa.



DOWNINGTOWN PATENT WET END (PATENTS PENDING)

dividends. Total surplus was increased to $6,282,968.

Notes and Jottings of the Trade

A. P. Costigan, secretary-engineer of the Ontario Pulp and Paper Makers' Safety Association, has returned to Toronto after a visit of investigation to the eastern territory in connection with compensation matters. The results, stated Mr. Costigan, were satisfactory and bid fair to reflect on future activities.

E. H. Smith, vice-president of the Howard Smith Paper Mills, is spending a few weeks in Bermuda.

Recent information is to the effect that Edmonton, Alberta, is endeavoring to revive interest in the establishment of a straw-paper industry in that city. It is stated that a meeting of leading citizens is to be called shortly and the project got under way.

Miami Valley Looks for Improvement

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, March 7, 1933—Despite the unusual banking situation, it was the expressed belief here that this week marks the beginning of the revival of trade throughout the country.

In Dayton and Miami Valley cities, notably Hamilton and Middletown, the chief paper-producing sections, banks and business men co-operated in providing funds, following the declaration of a bank holiday the first of the past week, and the restriction of withdrawals.

The general situation was considered to have been on the upgrade. Hamilton paper mills have enjoyed a good business, the Champion Coated Paper Company having been one of the busiest in the valley and one of the most consistent producers in the nation. The Beckett Paper Company in the same city has run regularly on a good list of orders, although slightly slack at times. Few other industries in Hamilton have done as well, although the Black-Clawson Company has operated with a good-sized force; at times being quite busy.

In Dayton the Aetna paper mills of the Howard interests have been operating with regularity, together with the Maxwell mills at Franklin, which supply considerable envelope paper to the International Envelope Corporation in Dayton, which holds the four-year Government envelope and newspaper wrapper contract.

The paper manufacturing and envelope-making, parchment and pulp departments in West Carrollton have had a fairly-good run.

Finnish Timber and Paper Calendar

Edited by Onni O. Ojala, of Helsingfors, Finland, the "Finnish Timber and Paper Calendar for 1932-1933" appears almost in the same make up as its predecessors. Some new general articles have been added, while orders have been re-edited in order to bring the statistical material as well as other information up to date.

A good many alterations have been necessary in the saw milling section as some enterprises have closed down altogether and others made changes in their output, etc., while a number of new firms have come into existence. In this section, as well as in those referring to the plywood, paper, cellulose and mechanical wood pulp trade, also most recent alterations have been noted so as to render references as accurate and complete as possible.

The calendar may be ordered from "The Finnish Timber and Paper Calendar," S. Esplanadgatan 2, Helsingfors, or from its agent in England, Thomas J. Stobart, Cathedral House, 8-11 Paternoster Row, London E. C. 4. The price per copy is twelve shillings, free of postage.

Sacandaga Reservoir Assessments

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., March 6, 1933—The newly constructed Sacandaga Reservoir is costing paper mills in Saratoga County about 70 per cent of the original construction cost of $12,000,000 and annual installments over a period of forty years have been levied. Among those benefitting by it are the International Paper Company, West Virginia Pulp and Paper Company, Warren Curtis Manufacturing Company, Moreau Manufacturing Company, Union Bag and Paper Company and the Fort Miller Pulp and Paper Company. Notice has just been sent out by the county calling attention to the eighth annual levy which for construction this year amounts to $531,612.48 as well as a third annual assessment for maintenance amounting to $86,912.50. A total of $618,524.98 is the amount that industries have been taxed this year.

The huge reservoir is under the control of the state but the entire cost of construction and operation is being borne by those corporations that are directly benefitted. The chief beneficiaries are the paper mills, pulp mills, bag manufacturing plants, electric power generating concerns and others which use this new source of energy in this section. Bonds were issued by the Hudson River Regulating Board to provide for construction and the security behind these is the assessment which is levied against the real property of those benefitted. The forty installments are assessed annually and placed on the county tax rolls the same as other taxes and when collected are used to pay off one-fortieth of the $12,000,000 in bonds which are issued to fall due each year for the same amount.

The initial estimate for building the reservoir was placed at $9,000,000 but subsequent developments in which condemnation proceedings to acquire property was necessary brought the total cost to $12,000,000.

Cornstalk Paper for Government Use

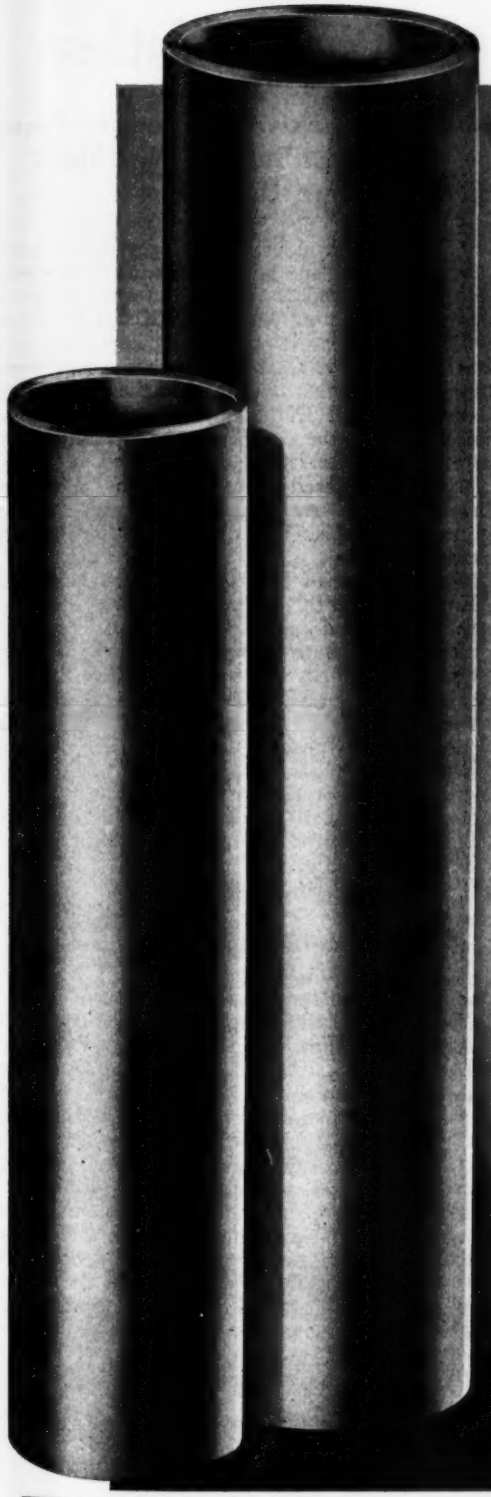
WASHINGTON, D. C., March 8, 1933.—Just prior to the closing of the session of Congress last week Representative Gillen, of Indiana introduced the following concurrent resolution in connection with the use of constalks for making paper. The resolution was as follows:

"That the Joint Committee on Printing shall investigate the feasibility of using paper manufactured from cornstalks in the printing of the Congressional Record and other Government publications. The joint committee shall report to the two Houses of Congress, as soon as practicable, the results of its investigation, together with such recommendations for legislation as it deems advisable.

"SEC. 2. For the purpose of this resolution the committee is authorized to sit and act during the present Congress at such times, whether or not the Congress, or either House thereof, is sitting, has recessed, or has adjourned, to employ such clerical, stenographic, and other assistants, to take such testimony, to have such printing and binding done, and to make such expenditures (not exceeding $—) as it deems necessary. The expenses of the committee shall be paid one-half from the contingent fund of the Senate and one-half from the contingent fund of the House of Representatives on vouchers signed by the chairman."

Max Oberdorfer Reelected President

Max Oberdorfer was re-elected president of the St. Helens Pulp and Paper company at a meeting of the board of directors recently. Dr. Robert H. Ellis, Portland, Ore., is vice-president and T. Rau remains as secretary-treasurer of the mill. H. F. McCormick, St. Helens, continues as chairman of the directorate.



NATIONAL USS STAINLESS AND HEAT RESISTING PIPE AND TUBES

Paper manufacturers find important advantages in the use of NATIONAL U S S Stainless and Heat Resisting Pipe and Tubes. Added to the advantages of being a seamless product made from superior quality Electric Furnace steel, and having a wide adaptability, the special virtues of these tubes are superior corrosion resistance, effective even at high temperatures, and more particularly, resistance to attack by certain troublesome acids. Among several compositions that are available, those recommended especially to the paper industry are U S S 18-8 (18% chromium, 8% nickel), U S S 17 (17% chromium), and U S S 12 (12% chromium).

NATIONAL U S S Stainless and Heat Resisting Pipe and Tubes can be readily cut, threaded, flanged or bent. They are made in a wide range of diameters, wall-thicknesses, and lengths, and with plain, upset, or otherwise formed ends. A large assortment of sizes is kept in stock for immediate shipment.

Investigate now the possibilities of Stainless and Heat Resisting Tubes in your plant. NATIONAL Engineers will gladly lend their aid in determining the best application of this material to particular requirements. Descriptive literature upon request.

U S S Chromium-Nickel Alloy Steels are produced under the licenses of the Chemical Foundation, Inc., New York, and Fried. Krupp A. G. of Germany.

NATIONAL TUBE COMPANY

Frick Building, Pittsburgh, Pa.

QUALITY PRODUCTS — Dependable Service

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES

American Bridge Company
American Sheet and Tin Plate Company
American Steel and Wire Company
Carnegie Steel Company
Columbia Steel Company
Cyclone Fence Company
Federal Shipbuilding and Dry Dock Company
Illinois Steel Company
National Tube Company
Oil Well Supply Company
The Lorain Steel Company
Tennessee Coal, Iron & R. R. Company
Universal Atlas Cement Company

Pacific Coast Distributors—Columbia Steel Company, Russ Building, San Francisco, Calif. *Export Distributors*—United States Steel Products Company, 30 Church Street, New York, N. Y.

Boston Paper Market Continues Listless

Demand for Various Standard Grades of Paper Only Moderately Active At Present—Request For Writing Papers, However, Is Fairly Persistent—Box Board Business Well Maintained—Banking Situation Makes Collections More Difficult

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, MASS., March 6, 1933—Hardly more than a moderate volume of orders was received by Boston paper jobbers during last week, it is estimated. As a whole, the market was rather dull, although in some quarters reported as "more speedy" than previously. The bank holidays outside of New England naturally had some effect on retail trade during the week, tending to make collections more difficult for wholesalers and manufacturers, and a moratorium proclaimed March 4 in each New England State for periods from one to eight days did not tend to accelerate business that day and rendered it impossible for employers to secure money from banks to meet pay roll requirements.

While there was no decided improvement in fine paper during the week under review no marked recession took place. Some plans for advertising are being carried out, and are in prospect, bringing about a certain amount of demand from printers. The call for fine writing paper has been fair. In specialties, such as material for diplomas and diplomas themselves, some "livening up" has developed. For a considerable period until recently, schools and colleges as a whole have been holding off, but now inquiries are being made as to prices. There was a greater demand for box covering papers than during the previous week. Sample books of new lines of box papers have been sent to New England representatives by manufacturers. Kraft has shown little, if any, improvement in the market generally, although in some quarters is reported fair and "picking up."

Box board is in fair demand. Some report that there was more business in February than in January. The call for material for jig-saw puzzles and their containers persists.

A paper stock dealer says that, on the whole, business seems to be marking time, waiting for constructive news from Washington, although in some lines there was more movement last week. Kraft papers are stronger in the Boston market. The supply here is reported as insufficient for the local mills with the result that manufacturers are bidding against each other. The high side of the quotation on No. 1 kraft is stated by a local dealer to be 30 points per hundredweight above that in New York. The price here ranges from .70 @ .80. Greater activity was noted in white blank news, old newspapers and corrugated boxes. Roofing stock showed more life, the No. 1 grade advancing to .40 @ .45 from a former range of .35 @ .40 and the No. 2 grade to .35 @ .40 from .30 @ .35.

News of the Trade

The Oxford Paper Company, Rumford, Me., has prepared new sample books containing, in swatch form, its complete simplified line-up of book papers. They are being distributed by Carter, Rice & Co., Corp., throughout New England. The books are compact and convenient for filing. A loose leaf feature facilitates the making of changes in colors or lines.

Arthur E. Ham, who has been in the paper business for forty-one years and now doing business as Arthur E. Ham & Son, 10 High Street, Boston, Mass., finding himself in financial difficulties, at the suggestion of a number of his creditors, made an assignment for the benefit of his creditors to John R. Kewer, attorney at law, 85 Devonshire street, Boston, Mass. Mr. Kewer is well and favorably known, having handled many important assignment cases. Mr. Ham felt, after very careful consideration of existing conditions, that this step was the most advisable one to take. Arthur E. Ham states he will do everything in his power to assist the assignee in the liquidation of the business to the best interests of the creditors.

The Blackstone Glazed Paper Company, Pawtucket, R. I., has sent out a new line of fancy papers for box covering purposes, which is being handled by its Boston representatives.

Col. Edgar Smalley, of Edwin Butterworth, Ltd., Manchester, England, is in this country for a few weeks, calling on the trade, and making his headquarters at the Boston office of E. Butterworth, Inc. Colonel Smalley usually visits the United States once or twice a year.

The spring meeting of the Boston Paper Trade Association is to be held at the Algonquin Club March 15. Dr. Bigelow, Massachusetts Commissioner of Public Health, is to be the speaker.

The Sealing Tape Corporation, paper products, has been incorporated. There are 500 common shares having no par value. Officers and incorporators are as follows: President and treasurer, Isaac Levin, 15 William street, Bellows Falls, Vt.,; Jacob Sack and Herman I. Baker.

Crown Zellerbach's Report

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., March 6, 1933—The annual report of the Crown Zellerbach Corporation operating branches here, for the nine months ending on February 1 shows a net profit, exclusive of drain on the concern's own bonds purchased for redemption, of $36,848 after depreciation, depletion, interest, federal taxes, minority interest and other charges. This is equivalent to 14 cents a share on combined 190,731 no par $6 Class A and 58,970 no par $6 Class B preferred shares. This compared with $1,136,793, equivalent, after full preferred and preference dividend requirements, to less than one cent a share on 1,991,680 no par common shares in the corresponding period of the previous fiscal year. Mills under control of the company here include the National Paper Products Company and the West End Paper Company.

A Correction

A. E. Cofrin, president and treasurer, of the Fort Howard Paper Company, Green Bay, Wis., writes:

"We refer to your issue of February 23, page 16, first column, incorporated under the caption—'Fort Howard Officers Re-elected.' We wish to make a correction as to the misstatement of this company's position relative to a countervailing duty on pulp imports.

"This company is very definitely opposed to any countervailing duty on wood pulp and has very good and sufficient reasons for this position."

The TERRY Steam Turbine Co.

TERRY SQUARE, · · HARTFORD, CONNECTICUT

DISTRICT OFFICES

ATLANTA, GA.
BOSTON, MASS.
BUFFALO, N. Y.
CHARLOTTE, N. C.
CHICAGO, ILL.
CINCINNATI, OHIO
CLEVELAND, OHIO
DALLAS, TEXAS
DENVER, COLO.
DETROIT, MICH.
GRAND RAPIDS, MICH.
HAVANA, CUBA
HOUSTON, TEXAS
KANSAS CITY, MO.
LONDON, ENGLAND
LOS ANGELES, CALIF.
MEMPHIS, TENN.
MILWAUKEE, WIS.
MINNEAPOLIS, MINN.
MONTREAL, QUEBEC
NEW HAVEN, CONN.
NEW ORLEANS, LA.
NEW YORK, N. Y.
PHILADELPHIA, PA.
PITTSBURGH, PA.
PORTLAND, OREGON
RICHMOND, VA.
ST. LOUIS, MO.
SAN ANTONIO, TEXAS
SAN FRANCISCO, CALIF.
SYRACUSE, N. Y.
TORONTO, ONTARIO
TULSA, OKLA.
WILKES-BARRE, PA.

PRODUCTS

STEAM TURBINES — **HERRINGBONE GEARS** — **TURBO-GENERATOR UNITS, ETC.** — **FLEXIBLE SHAFT COUPLINGS**

TERRY STEAM TURBINES:

Each Terry Turbine is specially designed for the conditions under which it will operate. Therefore, in writing for information, the following data should be included so that we can offer the turbine best suited to your conditions: (1) Steam pressure available at the turbine inlet. (2) Temperature of steam. (3) Exhaust steam pressure. (4) Horsepower required. (5) Revolutions per minute at which driven machine will operate. (6) Make, size and type of machine which turbine will drive and any special details or requirements.

Indestructible one-piece steel Terry Turbine Wheel

APPLICATIONS:

Terry Turbines are used to drive centrifugal pumps, blowers, fans, generators, exciters, coal pulverizers, paper machines, line shafting and many other types of apparatus. Vertical turbines are used to drive deep well pumps, blowers, etc.

SIZES AND TYPES:

All sizes up to 2000 H.P. and for all steam pressures and exhaust pressures. Built for condensing, non-condensing, low pressure, mixed pressure and bleeder operation. Turbine may be either direct connected to driven machine or through Terry herringbone gears. Vertical turbines in capacities up to 600 H.P. are also available.

TERRY MULTI-VELOCITY STAGE TURBINES — Durable and trouble proof:

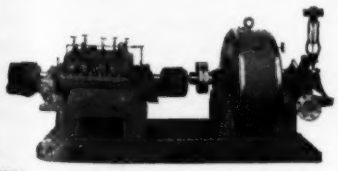
Employ an indestructible one-piece wheel made from a steel forging. The buckets are milled from the solid metal. The power producing action of the steam in the wheel takes place entirely on the curved surfaces at the back of the buckets. Wear at this point does not affect the angle at which the steam enters or leaves the wheel. **Therefore, these turbines will maintain their original capacity for years.** Blades have large clearances and are further protected by projecting rims at the sides of the wheel. It is impossible for the blades to foul. High efficiencies are obtained even at low speeds. Bulletin S-84.

TERRY MULTI-PRESSURE STAGE TURBINES:

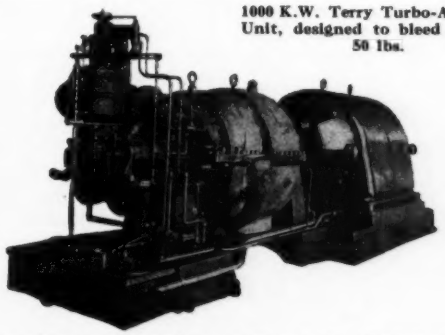
Employ a high pressure and low pressure element. High pressure element consists of a two or three-row velocity wheel; low pressure element consists of several stages of the Rateau type. Machines are so designed that the correct number of stages can be used to fit exactly the conditions under which turbine will operate. Bulletin S-80.

GOVERNORS AND CONTROL MECHANISMS:

Turbines may be equipped with various types of governors: (A) Constant speed, either direct acting or oil relay type. (B) Variable speed hydraulic fluid. (C) Overspeed trip. All Terry overspeed governors include entirely separate tripping mechanism and separate overspeed valve. They are in no way connected with main governor valve. (D) Pump governors, constant or excess pressure type. (E) Remote speed control mechanisms can be supplied so that turbine speed can be controlled from some distant point. (F) Governors to meet special requirements can also be designed. Tell us your problems and we will assist in their solution.



Boiler Feed Pump with Terry Turbine Drive, equipped with excess pressure pump governor



1000 K.W. Terry Turbo-Alternator Unit, designed to bleed steam at 50 lbs.

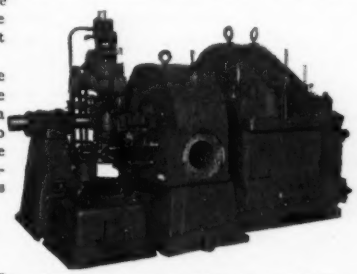
TERRY TURBO-GENERATOR UNITS:

Made in all sizes from 3 to 1000 K.W. d.c. or a.c. Geared or direct connected. Units may be designed for bleeder pressures or back pressures of 100 lbs. or over. The exhaust steam is clean and free from oil. It may be used for all types of heating and process work.

VARIABLE SPEED TURBINES:

Are the result of many years of experience in supplying variable speed drives for paper machines — a service that is extremely exacting due to the accurate governing that is required at all speeds.

Units are equipped with the Terry Hydraulic Fluid Type Governor. This mechanism permits the turbine speed to be varied throughout a wide range while the unit is in operation. Accurate governing is obtained at all speeds.



600 H. P. Terry Turbine Gear Unit. Equipped with variable speed governor and remote speed control

TERRY HERRINGBONE GEARS:

Used for speed increasing or reducing.

Gears and pinions are double helical type. No end thrust. Forced feed lubrication throughout. Oil pump below normal oil level insuring copious lubrication when starting. Bearings and gear housing are of extremely rugged construction. Cool, quiet, efficient. Specially designed for high speed service. Conservatively rated. Bulletin S-17.

Forged Steel Shaft Coupling

TERRY FLEXIBLE COUPLING:

High grade, accurately constructed coupling of pin and bushing type. Faces and peripheries of coupling flanges are accurately ground to facilitate checking alignment. Flanges are made from steel forgings. Sizes from 1 to 12 in. maximum shaft bore. When making inquiries, state diameter of shaft, revolutions per minute, horsepower transmitted and type of machines to be connected. Bulletin S-66.

7-1093

Philadelphia Paper Market More Buoyant

Announcement of Slight Advance In Quotations On Sulphite Bonds and Cheaper Grades of Book Paper Acts As Real Stimulus—Improved Request Experienced for Printing Papers—Jig-Saw Puzzle Demand Assists Paper Board Industry

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, PA., March 6, 1933—The past week closed and the new one begins with a most marked improvement in trade spirit. It must be admitted that what amounts to almost a bound forward was inspired rather by anticipation of what is to come than on actual attainment. On the other hand, however, those anticipations have what even conservative members of the trade believe to be a substantial foundation and while the merely psychological enters largely into it there are elements of the material which are of importance.

So far as the paper distributors are concerned, announcement which came during the midweek of an advance in sulphite bonds and the cheaper grades of book paper, following the telegraphic cancellation of quotations reported a week ago, acted as a real stimulus. While the advance was not very large—being approximately but ¼ cent a pound—the fact that there was an advance of any kind at this time unquestionably will produce beneficial results; and because of the low levels which have maintained for months the trade is of the opinion that despite economic conditions generally the slight advance has a real permanent basis.

Even if it did no more than give assurance that the downgrade had ceased it would be encouraging, but with an advance—though but a slight one—opinion is general that buying will be stimulated. Furthermore than this the trade believes will be most advantageous the slight advance in the standard lines which will have a marked tendency in mopping up from the market still too large stocks of job-lots, the offering of which at any price obtainable, has in recent months been most detrimental. The trade, of course, is hopeful that the turn evidenced by the new quotations will improve the quality of demand, since in recent months the only consideration of consumers seems to have been prices, not character.

Those who follow industrial and financial reports point to the improved prices which appeared during the week of such basic commodities as wheat and of cotton as a justification for their belief that a distinct turn is in the course of taking place. And, of course, quite irrespective of any political preferences, the advent of a new national administration at Washington is regarded as potent with great possibilities.

Need for Co-Operation

Through very force of the circumstances which have existed in recent months there is more evident than for perhaps two years back the feeling that only through the fullest cooperation between members of the trade—each with the other—and by all the trade with the printing industry, can mutual benefits be attained. In this connection a special meeting of the Paper Trade Association hurriedly called last week, and the meeting of the Paper House Credit Men, to be held tomorrow, and the regular meeting of the Paper Trade Association during the forthcoming week are of importance. It is known that a broad movement of benefit to both distributors and consumers of printing papers is afoot, but thus far has not been so definitely determined that announcement can be made.

The week brought little change in market conditions so far as the higher priced grades of printing papers are concerned, but there was noted a slightly improved demand with prices rather firmly held. The best aspect of the week's condition lies in the fact that there is lessening and has almost ceased the bitter—almost cut-throat—competition maintaining since the year began and which set in shortly after the slight spurt took place just before the holiday season.

Paper Stock Virtually Unchanged

Conditions in the paper stock market remain virtually unchanged save that there is a decrease in the small amount of stock in the hands of the warehouses. The advance of 50 cents a ton on news in New York, has not thus far been reflected here, and the jobbers are prone to suggest that an understanding among the mill men is largely responsible. While inquiries for mixed and commons, suitable for conversion for the jig-saw puzzle craze have been more numerous it has not been found possible to secure the slightest advance in quotations.

In addition to the consumption of surplus stocks left from the calendar trade and the stimulus to die makers, there have been, of course, benefit to the ink manufacturers and makers of cardboard both for pictures and for their containers in the consumption of glassine and cellophane cover lines which are now quite extensively carried by the wrapping paper trade. The Garrett-Buchanan Company is one of the firms now making a special display of materials for picture puzzle production.

Paper and Cordage Association

President Hooper and other officers of the recently revived Paper and Cordage Association are not only gratified but virtually surprised at the response which has been received by the membership committee from firms whose coarse paper and twine business are merely incidental. Inquiry has been received even from some of the paper mills, since widespread publicity was given to the fact that the plan of the Association is not merely to secure attendance of one representative of each house but to open the doors to all the salesmen, not only for social contact but for the consideration of every day business experiences.

President Hooper announced that during the forthcoming week, chairmen of the several committees will convene from time to time in order that they may be in position to present complete and comprehensive reports when they meet in regular session on March 17 at the Hotel Adelphia. At this meeting they expect a very goodly number in attendance. President Hooper stated that very many of the big houses expressed interest in the work being carried on, the plan being conducted along different lines and inasmuch as price regulation did not enter into it there was a common sense appeal. The latest addition to membership is W. E. Swan of Kalamazoo Vegetable Parchment Company.

Federal Reserve Report

Conditions as to production, stock on hand, prices and employment in the paper and allied industries in the Third Federal Reserve District, are reviewed in the March 1 issue of the Business Review, published by the Federal Reserve

Bank of Philadelphia. Because of the exactness with which these statistics are compiled, the issue, however, only covers the period ending with February.

The index numbers are expressed in percentage of the 1923-1925 average, which is taken as 100. For the wholesale paper trade the index figures for January 1932 were 59.6; for December, 1932, 48.6, whereas for January, 1933, they were 43.9. And comparing 1933 with a year ago there is reported a loss of 26.3, and with a month ago a loss of 9.7. The figures with regard to stocks of goods on hand on this same basis of 100 for 1923-25 average are for January, 1932, 69.9; for December, 1932, 70; and for January, 1933, 64.8. The employment statistics on the same 100 per cent basis for 1923-25 are for paper and printing jointly, January, 1933, 80.3, a loss of 9.1 from January, 1932, and of 1.5 from December, 1932. For payrolls for January, 1933, it shows 63.6—a loss of 23.3; from January, 1932 and a loss of 3.5 from December, 1932.

News of the Trade

Whiting Paper Company have engaged E. A. Bardsley as their flat paper representative in the Cleveland territory.

Legal notice has been given that in the case of Garrett-Buchanan Company and Triangle Printing and Poster Company of Georgia *vs.* Triangle Printing and Poster Company, Respondent, receivers have filed their account with the United States District Court for the Eastern District of Pennsylvania, and this will be presented for audit on Wednesday, March 15, when application for the discharge of receivers will be made. The receivers are represented by William S. Furst and Frank Fogel, Stock Exchange Building.

Miss Helen Garrett, daughter of Sylvester Garrett, 259 South 3d street, is in France as a teacher of English and a student at the University of Lisle, where she is taking a course in French history, Philosophy and Medieval History. In her letters home, interesting sidelights are thrown on the condition of public sentiment in France and in the movements of the followers of the Duke of Guise to bring about change in government.

A. C. Higgins Heads Norton Co.

WORCESTER, Mass., March 4, 1933—Aldus C. Higgins was elected president and general manager of the Norton Company at the company's annual meeting January 17, upon the retirement of Charles L. Allen, who has been the one and only general manager of that company for 47 years and its president since 1919. Although Mr. Allen has retired from executive participation in the affairs of the company, he was elected chairman of the board of directors and will still be in close touch with its activities.

Mr. Allen has been associated with the Norton Company since the incorporation of the old Norton Emery Wheel Company in 1885 and has been the only general manager the company has had. He was president of the company since 1919 until his recent retirement.

Mr. Higgins is a son of one of the founders of the Norton Company and its first president, Milton P. Higgins. He has been associated with the company since 1900, in the early years as manager of research laboratories, manager of research and abrasive plants, secretary from 1912 to 1919 and treasurer and general counsel from 1919 to 1933.

George N. Jeppson, vice president in charge of production was made treasurer to succeed Mr. Higgins. Other officers of the company are Clifford S. Anderson, general counsel and assistant secretary; W. LaCoste Neilson, vice president and sales manager; Lewis E. Saunders, manager of research; Henry Duckworth, assistant treasurer and comptroller and Clarence W. Daniels, plants engineer.

Indianapolis Demand Continues Slow

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., March 6, 1933.—Some business was done in spite of difficulties. The jobbers in summer specialties report a flock of inquiries during the last week. Weather here has moderated considerably and due to the fact that dealers and other users bought so sparingly last year, very little merchandise was carried over. This necessitates buying in rather large quantities to start off the season.

Perhaps the busiest company in the paper industry here is a local manufacturer of jig saw puzzles. The company is working overtime and praying the public does not tire of the rather new fad. Most of the puzzles put out are of paper construction, but some are made of wood.

The week saw some increase in demand on the part of mills for paper stock. As the result local warehouse stocks now are low and the paper stock trade here says they will be kept low. In spite of the increase in demand it was virtually impossible to chisel any price increase. The local trade is pretty much disgusted with the general trend and will not bother to increase their warehouse stocks until more money is offered. As it is, paying prices for paper stock are the lowest in years and not a great volume is being offered for sale.

Jobbers of building paper report some demand, but this is not expected to improve much until the first of next month. They are expecting a better volume, however, than they have had in the last three years, particularly if the loaning companies put out any money for repair and remodeling.

TAPPI Notes

W. O. Hisey, formerly chemical engineer with the Celotex Company and the Oxford Paper Company, is now with P. H. Glatfelter Company, Spring Grove, Pa.

Roger J. Egan, western representative of Bulkley-Dunton & Co., is now located at 221 N. La Salle Street, Chicago.

R. J. Schadt has resigned his position as technical director of the Hawley Pulp and Paper Company and may be reached at West Linn, Ore.

An interesting 113 page booklet on "Products from Wood," by Hilding Bergstrom of the Royal Swedish Institute for Engineering Research has been published. Copies may be obtained on request from G. L. M. Hellstrom of Paper Machinery Ltd., Drummond Building, Montreal, P. Q.

H. W. Richter of the George O. Jenkins Company, Bridgewater, Mass., is anxious to obtain a copy of the PAPER TRADE JOURNAL of January 10, 1929. Anyone who has a copy that he is willing to give or sell to Mr. Richter should communicate with him direct.

Indexes to the TAPPI section of the PAPER TRADE JOURNAL Volume 95, July to December 1932, are now available on request. Write to the Secretary of TAPPI, 370 Lexington Avenue, New York.

Liberty Paper Board Co. Reopens

DAYTON, Ohio, March 7, 1933—Word has been received here that the Liberty Paper Board Company's plant at Steubenville, Ohio, which has been closed for the past year, reopened Monday, March 6, and that approximately 40 men were given employment.

W. G. Shortess, president of the company, said the prospects were fairly good for regular operation. Receipt of recent orders, he is reported as saying, made possible the resumption of operations.

Obituary

Merrill B. King

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, MICH., March 6, 1933—Death struck at the romance of the Kalamazoo Valley paper industry on March 2, when Merrill B. King, youngest mill president in the district, and scion of the pioneer paper maker in this region, dropped out of an airplane 800 feet in the air into a South Carolina rice marsh near Charleston. The 43-year-old mill executive leaves a widow and three children. He was born at Otsego, May 21, 1890, where his father, the late John F. King, was mill superintendent of the Bardeen paper mill.

In 1895, the Kings moved to Kalamazoo where the father, with Noah Bryant and Frank H. Milham, built the first unit of the Bryant Paper Company. The son, after completing his studies in Kalamazoo schools, entered the employ of his father, who had, in 1901, established the King Paper Company, which later was absorbed by the Allied Paper Mills, Inc.

In 1915, the father disposed of his holdings in the King mill and started the Rex Paper Company. The son served as vice-president. Mr. King has been president and general manager of the Rex Mill since the death of his father in 1922. During the World War, Mr. King served as cadet in the aviation corps.

Mr. King left Kalamazoo early in February to attend the convention of the American Paper and Pulp Association in New York, and had gone to Miami, Fla., and Havana, Cuba, for a vacation before returning home. He was on his way from Miami to Newark, N. J., when he met his death.

William Barber

William Barber, founder of the Barber Paper Company, predecessor of the Victoria Paper Company, in Fulton, N. Y., and formerly president of the Wholesale Paper Company, a subsidiary of the National Paper Company, died at his home, 114 Wood Avenue, Syracuse, N. Y., on Monday morning, February 13. He was 83 years of age.

Born in Wales, Mr. Barber came to this country and settled in Mottville when a young man. He was secretary and treasurer of the Mottville Paper Company until 1888. Resigning, he went to Fulton and established the paper company that bore his name.

In 1892, he sold the plant to the Victoria Paper Company and went to Syracuse to become president of the Wholesale Paper Company. Mr. Barber retired in 1928. He was a member of Furman Methodist Episcopal church and of Central City Lodge 305, F. and A. M.

Surviving are his wife, Mrs. Josephine A. Billings Barber; three daughters, Mrs. W. H. Flaxington, of Freeville, Mrs. Blanche B. Hallenbeck, of Syracuse and Mrs. Robert C. Farrington, of Shaker Heights, Ohio; a sister, Mrs. Walter S. Chare, of Skaneateles; a brother, James S. Barber of Solvay, and six grandchildren.

Edgar G. Barratt

Edgar G. Barratt, former president of the Union Bag and Paper Company, of New York, and a prominent consulting engineer, died Thursday, February 16, in the Doctors' Hospital, New York, after an illness of several weeks. Mr. Barratt lived at 235 Harrison Street, East Orange, but was passing the Winter with his family at the Barbizon-Plaza in New York. He was 69 years old.

With his son, Roswell Barratt, New York architect, Mr. Barratt designed the portable village used in Little America by Admiral Byrd and his party in the South Polar expedition. The son, who is a personal friend of Admiral Byrd, interested his father in the expedition and the two men worked for many months to design the sectional buildings and the heating plants used at the Antarctic base.

Mr. Barratt and his son also designed the Metcalf Memorial Building in Orange. He resigned as president of the Union company in 1919 and opened offices as a consulting engineer in New York.

He was an engineering graduate of Columbia and took an active interest in alumni organizations of the institution. Mr. Barratt was a member of the Columbia University Club of New York, the City Club, the Essex Country Club and the University Club of Chicago and Phi Gamma Delta fraternity.

Besides his son he is survived by his widow and a grandson.

William H. Sunshine

William H. Sunshine, sales manager of the Tarentum Paper Mills, Tarentum, Pa., died at the Memorial Hospital at Johnstown, Pa., on Sunday, February 19. He was in his 64th year.

Mr. Sunshine helped to organize the United States National Bank at Johnstown in the summer of 1901 and served on the original Board of Directors. Some time later Mr. Sunshine helped to organize the Union National Bank in the Park Building and served as its head at one time. This banking house was merged with the First National Bank about 1928.

About twenty years ago Mr. Sunshine, with the late George M. Wertz and others, organized the *Johnstown Leader,* an afternoon newspaper which was printed locally for a number of years.

Mr. Sunshine was admitted to membership in Cambria Lodge, No. 278, F. and A. M., in 1892, and joined Portage Royal Arch Chapter, No. 195 the following year. He was one of 27 local Masons in the charter class when Cambria Council, No. 32, Royal and Select Masters, was re-constituted in 1903. He was knighted by Oriental Commandery, No. 61, Knights Templar, in 1894 and was affiliated with Syria Temple, Ancient Arabic Order Nobles of the Mystic Shrine, Pittsburgh.

In 1896 Mr. Sunshine served as president of the Yoder Outing Club, an organization of prominent business men of Johnstown who held their sessions at Paint Creek.

Burton F. Swain

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, IND., March 6, 1933—Burton F. Swain, 68 years old, treasurer of the Kennedy Car Liner and Bag Company, of Shelbyville, Ind., died recently at his home following an illness of two months of anemia. He was president of a bank there, head of a lumber company and a Republican political leader.

Starting as a store clerk, he became bookkeeper in a lumber mill which he later acquired. He then became president of a large veneer company in this city and formed a retail company at Seymour, Ind. He was a former president of the National Hardwood Lumber Dealers' Association. He had been connected with the Shelbyville National Bank since its organization in 1905. He had been president eight years. He was elected Mayor of Shelbyville in 1905 and served four years.

He had been treasurer of the Republican city and county committee for a decade and had attended all the state conventions as a delegate for the last twenty years. He was a member of the Columbia Club here, the Presbyterian

Church, Masonic lodge, Elks, Knights of Pythias and the Mayflower Society. The widow, a son and a daughter survive.

William G. Linehan

[FROM OUR REGULAR CORRESPONDENT]

William G. Linehan, well known to members of the paper industry in Montreal and other centers, died at Glens Falls, New York, Thursday evening, March 2, after a long illness. He was born in Glens Falls, August 3, 1883. He came to Grand 'Mere, Quebec, in 1903, where he was employed by Laurentide Company, Ltd. Mr. Linehan moved to Montreal in 1913 where he was employed first by the Laurentide Company, Ltd., and subsequently, in 1917, became export manager of Canadian Export Paper Company, Ltd. While acting in that capacity he made extended visits to South America and South Africa.

In 1924 he went to London where he established and maintained his residence up to the time of his death. While there he was the London representative of Consolidated Paper Corporation, Ltd.

He had established a large circle of friends in all of the places where he had lived. In London he was a member of the Royal Automobile Club.

He is survived by his wife, Anna Irving Linehan, formerly of Glens Falls, New York.

George L. Matlack

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, PA., March 6, 1933—George L. Matlack, for more than thirty years connected in a sales capacity with the Jessup & Moore Company, died suddenly on Friday of last week. He complained of feeling ill while in the office of the Jessup & Moore Company and was promptly removed to the Hahnemann Hospital, and after a few hours, passed on. Mr. Matlack, because of his long experience with the Jessup & Moore Company had an unusually wide acquaintanceship in the trade. He was born in Salem, New Jersey, fifty-three years ago, and as a young man entered the Jessup & Moore organization, remaining with it continuously ever since. He is survived by his wife Adelaide E., a daughter Jane, and a son—a namesake—George L. Matlack, Jr.

Mrs. Garret Schenck

WESTON, MASS., March 6, 1933—Mrs. Garret Schenck, widow of Garret Schenck, formerly president of the Great Northern Paper Company, died at her residence, South Avenue, on Tuesday. Mrs. Schenck was born December 14, 1850, of Puritan ancestry, in North Attleboro, Mass. She leaves three children, Mrs. Joseph S. Cecil, of Richmond, Va.; Mrs. George D. Dutton, of Walpole, Mass.; and Hilbert van N. Schenck, of Chestnut Hill, Brookline, Mass.; also a daughter-in-law, Mrs. Garret Schenck, Jr., of Newton, Mass.; and a sister, Miss Frances N. Perkins, of Wellesley Hills, Mass.

M. H. Raymond

APPLETON, WIS., March 6, 1933—M. H. Raymond, of Rhinelander, Wis., a member of the board of directors of the Rhinelander Paper Company, passed away last week. He was 71 years old, and it is believed worries connected with the closing of the Merchants State Bank, Rhinelander, of which he was cashier for forty years, hastened his death. A resolution paying tribute to him and his services was adopted by the board of directors of the paper company.

Judgment Filed Against Oswegatchie

[FROM OUR REGULAR CORRESPONDENT]

GOUVERNEUR, N. Y., March 6, 1933—A deficiency judgment against the Oswegatchie Paper Company in favor of the Watertown National Bank for $1,848,532.05 was filed this week with the county clerk. The bank served as bondholders' trustee under two mortgages and deeds of trust executed by the paper company. An adjourned term of Supreme Court granted the judgment several weeks ago under an order by Judge E. N. Smith which is the outcome of a foreclosure proceeding instituted in Lewis county in 1930. The first mortgage or deed of trust is for $743,742 and the other calls for $1,104,790.05 making a combined total of $1,848,532.05.

The judgment is understood to be the largest filed with the county clerk in several years. The property of the defunct concern consists of a paper and pulp mill at Natural Dam, a pulp mill at Emeryville, extensive water power rights on the Oswegatchie River and large timber holdings in the Adirondacks. These were disposed of at a mortgage foreclosure sale and were bid in for a nominal amount by the first mortgage bondholders, leaving a huge deficiency to be met by the property to satisfy the mortgages. A number of creditors of the company having judgments were named in the foreclosure proceedings, among these being the Oswegatchie Light and Power Company, Lockport Felt Company, Harris Importing Company, Ryther & Pringle, Prudential Paper Company, Lubriko Company, Armstrong Machine Works, and several others.

For the past few years the property has not been in operation although rumors have gained circulation on several occasions that manufacturing would be resumed. The mortgage bondholders have been holding the property since with a view towards disposing of it to others.

Western Reforestation Program

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 6, 1933—Plans for the wider program of reforestation and fire prevention in Wisconsin, Minnesota and Michigan during the approaching season were gone over in detail at a meeting at Ashland, Wis., last week, of all federal forestry employees in the district. E. W. Tinker, Milwaukee, Wis., regional U. S. forestry director, was in charge. During a three day session, the rangers went over many matters including forest planting, fire fighting, and prevention, land management, work plans and job analyses, land acquisition, financial management, self-liquidating forest investments and forest accounting. H. Basil Wales, assistant regional forester, assisted in conducting the discussions. Extensive planting will be conducted during the spring and summer season, and a great deal of additional work will be done on construction of roads and fire lanes to give quick access to all areas.

Bids and Awards for Government Paper

WASHINGTON, D. C., March 8, 1933.—The R. P. Andrews Paper Company has been awarded the contract for furnishing the Government Printing Office with 240 pounds (3,000 sheets) of 10½ x 29—80 lbs., buff antique cover paper at 27 cents per pound, bids for which were received on February 13.

The Printing Office received the following bids for 200,000 pounds of manila calendered tag board; Barton, Duer & Kock Paper Company, at 6.035 cents per pound; Aetna Paper Company, 5.94 cents; R. P. Andrews Paper Company, 5.01 cents; and Perkins-Goodwin Company, 5.73 cents.

New York Trade Jottings

The McCartly Paper Company has been chartered under New York state laws with a capital of $20,000.

* * *

Stuyvesant Paper and Supply Company has been incorporated under the laws of the State of New York, with a capital stock of $10,000.

* * *

A. A. McDiarmid, chief engineer of Price Bros. & Co., Ltd., news print paper manufacturers, of Quebec, was a New York visitor early this week.

* * *

John A. Owen, formerly assistant advertising manager for the American Writing Paper Company, Inc., of Holyoke, Mass., has joined the Fraser Companies, Ltd., in an executive sales capacity. He will reside in New York.

* * *

H. H. Heinrich, head of H. H. Heinrich, Inc., New York, sailed recently for Germany and the Leipzig Fair. Mr. Heinrich keeps in close touch with European developments in connection with paper bag manufacturing and allied activities. He is the American representative for "Matador" bag machines and printing presses, manufactured by Windmoller & Holscher.

* * *

Sharp Paper & Specialty Company, Inc., importers and exporters, have removed from 200 Fifth Avenue to 220 Fifth Avenue, New York. The telephone number is Ashland 4-7636-7. Bernard Sharp, president of the company, declares that the outlook for future business in the territories in foreign countries where his organization operates, is more encouraging today than ever before.

* * *

The Atlantic Gummed Paper Corporation has just completed moving from 35 York street to 1 Main street, Brooklyn, N. Y. Although it is just around the corner the company now has its own railroad siding and much better facilities for trucking service. Its platforms accommodate six trucks and its siding five cars. The company has taken additional space in order to maintain its service. In the two years of operation it outgrew its old quarters due to the fact that it installed its own dyeing equipment which takes care of the dyeing of cloth for corrugated use. The company also put in combining equipment which allows it to combine cloth to cloth, paper to cloth and paper to paper, and will now be able to manufacture more economically and take care of the increased demand for its products, which has steadily grown every month since it has been in business.

* * *

There was an excellent attendance at the regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry, held at the Hotel Roosevelt, New York, on Monday last. George W. Sisson, Jr., president of the Racquette River Paper Company, who was the guest speaker, discussed "Using Grade Costs In Selling Paper." He emphasized the importance of regulated competition and expressed the opinion that there should be a profit on any individual transaction. He believed that the individual selling price should be not less than the cost of production. George A. Ware, formerly cost accountant of the News Print Service Bureau, who has been specially engaged by the Racquette River Paper Company for several months past, described how set up standards for every different grade manufactured by the company had been made, and mentioned that no less than seven hundred items had to be studied. At the close of the meeting a rising vote of thanks was extended to Mr. Sisson.

Wisconsin Valley Safety Conference

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 6, 1933—June 22, 1933 will be the date for the Wisconsin Valley Safety Conference, according to plans completed at a meeeting of the officers last week at Wisconsin Rapids, Wis. That city was selected for the gathering of hundreds of industrial workers and executives.

Officers of the conference were re-elected. J. J. Plzak, of the Consolidated Water Power and Paper Company, is chairman, and F. H. Rosebush, of the Nekoosa-Edwards Paper Company, is secretary. Twenty-five men from ten cities attended the business session at which they were elected.

Plans of the conference call for a separate sectional meeting for paper and pulp mill workers, because of their numbers and the opportunity to discuss safety problems peculiar to that industry. A general meeting will be held in the afternoon to discuss traffic and home safety as well as that of industry. An evening dinner or open meeting is planned with a prominent speaker to be scheduled.

Another meeting was held the previous day of the executive committee of the pulp and paper section of the National Safety Council, of which Mr. Plzak also is chairman. Reports of groups studying various phases of safety were reviewed and tentative plans made for the program of the pulp and paper section of the annual conference of the national council in Chicago next October. Resolutions outlining policies were adopted. Those attending besides Mr. Plzak and Mr. Rosebush were: George Burns, field director of the National Safety Council; H. D. Banta, Green Bay, Wis.; H. Ludwig, Wausau, Wis.; Henry Schreiber, Oshkosh, Wis., and Leo Barrett, Wisconsin Rapids.

To Investigate Pulpwood

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 8, 1933.—The United States Tariff Commission, in connection with the pulpwood resolution passed by the Senate last week and introduced by Senator Dill of Washington, announces that "the investigation will be made under the general powers of the Commission." It calls attention to the fact, however, that "these items are on the free list and over such commodities the Tariff Commission has no rate fixing jurisdiction.

Simplified Practice on No. 1 Kraft

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 8, 1933.—The standing committee of the industry in charge of the simplified practice recommendation covering No. 1 kraft paper sealing tape has reaffirmed the existing schedule for another year, without change, according to an announcement of the Division of Simplified Practice, of the Bureau of Standards.

This recommendation, which was suggested and formulated by the industry has been in effect since February 1, 1930.

Paper Bag Freight Rate Division

WASHINGTON, D. C., March 1, 1933—An Examiner has recommended to the Interstate Commerce Commission that the rate charged on paper bags, in straight carloads and in mixed carloads, with wrapping paper, from Rumford, Me., to Newark, N. J., and Philadelphia, are unreasonable and he suggests that reparation be awarded. The proposed decision is in the case of the Continental Paper and Bag Mills Corporation against the Atlantic City Railroad.

Reducing Beater Room Costs

Lawrence H. Jacobson[1]

As much interest has been shown in methods of handling beater room furnish in the new beater room of The Northwest Paper Company plant at Cloquet, Minnesota, we believe this description will be of interest to the paper industry.

Early in 1929 our firm was engaged to make plans for the addition of a new 210-inch book paper machine, together with the necessary auxiliary equipment. The management suggested that the opportunity be taken to make improvements to the old beater room at the same time; and to provide some improved method for handling stock between the pulp mill and the beaters—a method which would not only reduce the amount of lapped stock to be handled, but which would provide improved methods of control at the same time. The principal difficulty which we encountered arose from the fact that five different types of stock were being used, namely bleached sulphite, bleached aspen (soda pulp), kraft, sodite and nortex. In cooperation with the management and the operating staff a scheme was worked out which has proved to be practical and efficient.

A decker chest was provided for each type of pulp used. The chests are of the horizontal type, constructed of concrete. Chests were provided with longitudinal mid-feathers as in beaters, and pump type agitators were installed for circulating the stock. Stock is thickened ahead of the decker chests with conventional type of deckers, and is maintained in the chests as near as possible to 6 per cent consistency. The stock is pumped to overhead stock lines by means of centrifugal stock pumps, the suction sides of which are attached to the discharge sides of the agitator circulating pumps. Stock as high as 9 per cent consistency has been handled without difficulty. The main stock lines are fourteen inches in diameter, and return lines to the decker chests are not employed.

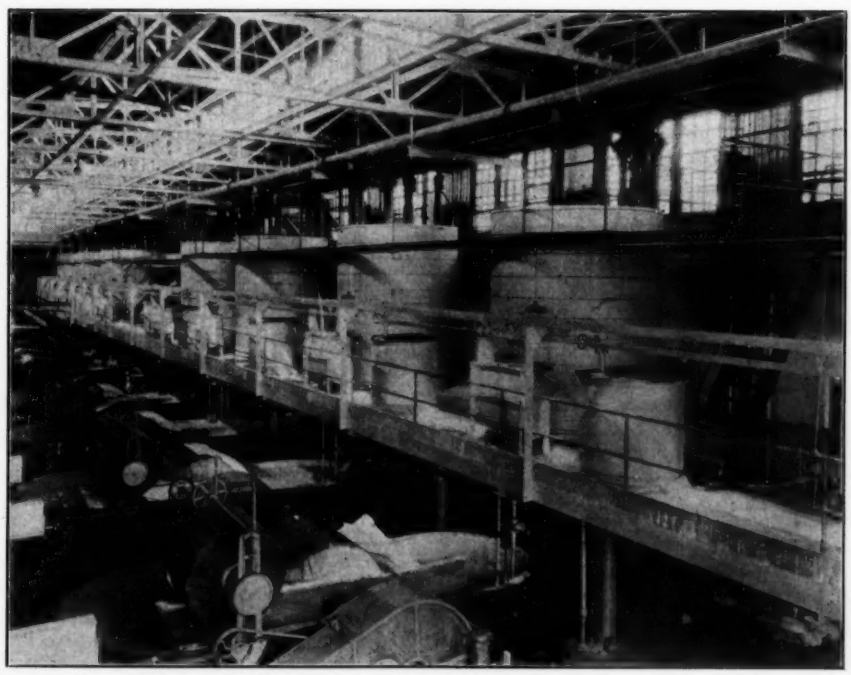
A mezzanine floor, incorporated in the new building design, was constructed the entire length of the new and old beater room as indicated in the accompanying photograph. On this floor there is mounted an individual charging tank for each beater. The tanks are of wood stave construction, each ten feet in diameter by thirteen feet in height. The tanks are provided with cone bottoms and copper discharge pipes equipped with quick opening valves accessable to the beaterman.

Vertical drop pipes from the overhead stock lines to the stock tanks are provided with plug valves operated from a runway or platform near the top level of the tanks. The pumps used for pumping stock to the charging tanks through the overhead stock lines are started and stopped for each charge by means of remote control start-stop push button stations at convenient locations, accessable to the operating platform. The entire operation of charging the tanks for fifteen beaters is handled by one man for each shift. Frequent rapid tests of the consistency are made by the operators; and the tanks are filled to various levels depending upon the consistency of the incoming stock. The height to which the tanks are filled with each type of stock is quickly determined by the operators from curves previously prepared.

The charging tanks are filled in advance of the time at which the beaters are dumped. Immediately after a beater has been dumped, the beaterman opens a valve below the charging tank, and the beater is completely filled in a very short period of time. If stock in the charging tank is reported to the beaterman as being of higher consistency than desired in the beaters, whitewater is added to bring the level of stock in the beater up to a predetermined level. Some lapped stock, of course, is used, but only when minor adjustments are necessary, and, or when the proportion of some stock in a given furnish is very small.

The pulp storage room is equipped with a pulping engine. Lapped pulp of various kinds may be broken up and pumped, to any one of the various decked chests. This is done, because the pulp storage is located in a building having a floor level below and at some distance from the beater room; and to reduce the amount of breaking-up to be done in the regular beaters.

Other parts of the furnish, such as clay, alum and size are also handled in a convenient manner. It so happened that the railroad siding and clay storage bin was located at a point about six-hundred feet away from the beater room. At the storage bin two tile tanks with cone bottoms were con-



Showing Mezzanine Floor Entire Length of Beater Rooms

[1] Memb. TAPPI, Jr. Memb, A.S.M.E. Jacobson Engineering Co., Consulting Engineers, Minneapolis, Minn.

structed and equipped with pump agitators for mixing. Clay in suspension is pumped to two large storage tanks at a high level in the beater room. As indicated on the photograph a large steel, copper lined tank is located above each beater. Clay flows by gravity to each of these tanks from the storage tanks previously mentioned. The tanks above the beaters are equipped with gage glasses and are filled to the height required in advance of each beater charge. A two compartment tank, one part of which is lead lined, is located above each beater for correct charges of alum and size solution. The alum and size solutions are made up in the basement, from where they are pumped up to the charging tanks. The operation of filling the clay, size and alum charging tanks is handled by the same man who fills the stock charging tanks.

All operations necessary to filling of all charging tanks are under laboratory control, handled, as previously mentioned, by one man on each shift. The beatermen have only to open and close the valves directly above each beater, one for a complete change of stock already composed of the proper proportions, and one each for clay, size and alum.

A reduction in beater room costs is effected through a reduction in the amount of lapped stock to be handled, and at the same time the amount of lapped pulp to be made in the pulp mill is reduced. In 1930, before the completion of the new installation, labor required in the beater room only for a production of 85 tons per day was 3.4 man hours per ton. In 1932, after completion of the new installation, based on a production of 150 tons per day, labor required was 2.5 man hours per ton, or a reduction of about 26.5 per cent. Savings in power result from a reduction in the amount of lapped pulp to be made in the pulp mill, and from the reduced amount of pulp to be broken up in the beaters. Other advantages result from being able to place the responsibility for making up the beater charges and maintaining consistency of the stock in the hands of a smaller number of men under laboratory type of control. Savings in beater charging time result because the full beater charge is made up in advance of the time at which the beater is dumped. The system as briefly outlined above has been in successful operation since July of 1931, serving the new paper machine as well as three other machines making many grades of paper.

It has proved to be sufficiently flexible to meet the various demands placed upon it and has been a worth while investment.

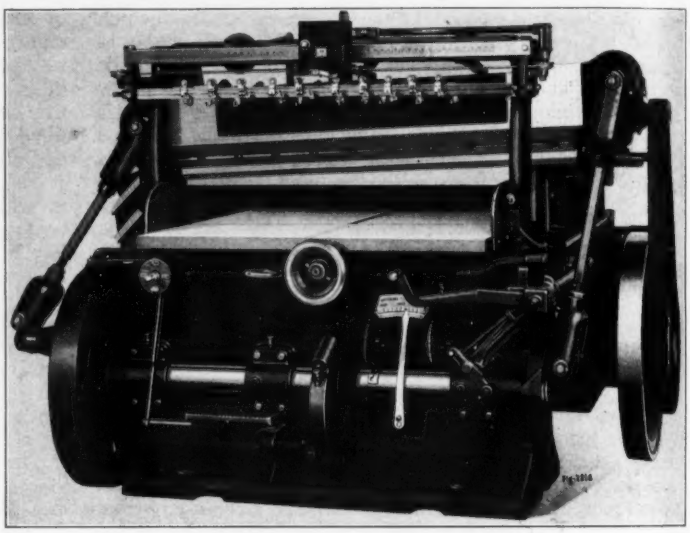
New Seybold Automatic Spacing Cutter

A new automatic spacing cutter is announced by the Seybold Machine Company Division of the Harris-Seybold-Potter, Dayton, Ohio. With the new Seybold Auto Spacer it is possible automatically to trim and cut as desired, with great increase in both accuracy and speed. It is readily set up to space unequal distances, and to make any and all trims.

A sheet may be laid out as desired—its first cut may be a trim; its second space three inches; its third, five inches, the fourth a trim-out; and succeeding cuts of any width wanted. A four-sided spacing bar permits of a maintenance of four sequences at once without interference. The set-up of switches when once made may be maintained for the entire job. The operation is simplicity itself.

The machine may be used also as an ordinary cutter when desired without interrupting any set-up and without any delay. All cutting is more accurate and consistent than it has been possible to achieve heretofore. The type of work best suited to the new Auto Spacer is that in which the cut lines are parallel, and extend all the way across the sheet in both directions. Rectangular labels spaced in squares are a good example. Sheets made up symmetrically as are chewing gum labels are ideal jobs.

Movable electrical stops are mounted on a spacer bar across the front of the machine. A small carrier containing two electrical switches and an illuminated scale, synchronized with the back gauge movement, moves along pattern of the cut, the traversing of the carriage over the the bar. After the stops are set in accordance with the stops makes an electrical contact indicating position of the pile for the cut by the lighting of a red signal light.



New Automatic Spacing Cutter

The electrical switch mechanism and contacts are within any accuracy now demanded in cutting. These switches serve also to actuate the mechanism for moving the pile forward automatically by power. The first movement of the pile is at the rate of four inches a second. When within a short distance of its stopping point for cutting position, momentum is $\frac{1}{16}$" per second.

The operator who watches the light whose flash indicates automatic register, now causes the machine to make the cutting stroke. At completion of the stroke the pile is moved forward by power, and automatically positioned for the next cut. Thus the cycle started by the cutting stroke includes the positioning of the pile for the next cut.

Paper and Pulp Mill Employment

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 1, 1933—The January index of employment in the paper and pulp industry was 72.2, compared with 73 for December and 77.4 for January of last year, taking 1926 at 100, according to the Bureau of Labor Statistics, Department of Labor. The January pay roll index number was 45, compared with 46.7 for December and 57.9 for January of last year.

January index number for employment in the paper box industry was 67.3, compared with 71.9 for December and 74.6 for January of last year, while the January pay roll index number was 51.4, compared with 58 for December, and 65.6 for January of last year.

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How to select the specific Stainless Steel to meet a specific requirement? That is the puzzle for many a manufacturer eager to modernize his product with this new and versatile material.

Illinois Steel Company manufactures a comprehensive series of Stainless Steels. One of these steels is the one you are seeking. One of them has the physical and metallurgical properties you need. Which one? Our engineers will be glad to consult with you, study your problem, and present conclusive evidence as to the particular grade of USS Stainless Steel which is ideal for your applications.

Here's USS 18-8, for instance

A steel of unusual resistance to corrosion attack, yet one which is also inherently amenable to virtually every mode of working known to the metal workers' art. It may be forged, pierced, rolled, drawn into finest wire, spun, deep drawn, machined, welded, and may be polished to a beautiful lustre which remains untarnished even in moist air.

USS 18-8 is practically non-magnetic and is austenitic, hence highly ductile.

While USS 18-8 is extremely versatile, there are certain applications in which one of the other USS Stainless Steels may better meet your requirements.

There is a USS Stainless Steel to meet every requirement.

Ferritic	*Austenitic*
USS 12 & 12Z	*USS 18-8*
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Henry J. Berger
Editor

Ronald G. Macdonald
Editor Technical Section

Herbert J. Laughton
Associate Editor

Thomas J. Burke, C. A.
Editor Cost Section

Lynne M. Lamm,
Washington Correspondent

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BANISH FEAR; RESTORE CONFIDENCE

Epoch making events occurred with lightning rapidity during the past few days. Bank moratoria followed one another rapidly in the several states and were succeeded by a federal bank moratorium and gold embargo. Franklin D. Roosevelt was inaugurated as the thirty-second President of the United States and the new Congress assembled at noon today to take immediate and perhaps drastic action on the serious conditions confronting the country. Seldom has history moved so rapidly.

President Roosevelt did well in pointing in his inaugural address that the severe case of "jitters" being manifested by many of our people was due to senseless fear. This must be overcome and will be doubtless as soon as the people realize that the banks are perfectly safe, but that it is utterly impossible for them to pay off the accounts of all their depositors at one time. This fact should be perfectly clear to everyone, but unfortunately it is not apparently as commonly understood as it should be. The banks are inherently sound and soon doubtless we shall see again a flood of money pouring into their vaults just as has happened in the past on many occasions when sanity has returned after senseless fear had stampeded depositors into temporary panic.

In the prevailing gloom it is inspiring to learn that observers far across the sea already discern a silver lining in the economic cloud. The London Financial Times says:

" 'When the history of the 1929-1932 slump is written, the United States banking crisis will be recognized as its turning point; President Roosevelt as the courageous leader which fate sends to every emergency.'

"That is what prominent London stockbrokers consider a prophecy. They believe the United States will keep the banner of sound currency flying, like in every previous crisis, and by saving herself will save the world by her example.

"Probably the United States and France, certainly Great Britain, will finally abolish the internal circulation of gold. The way is now open to Britain's return to a gold bullion standard, on a new parity, as soon as international economic problems are solved.

"Ninety-nine per cent of city responsibles are convinced that the United States, having put her house in order, will emerge as from previous crises more prosperous than ever.

"Higham Brothers, stock jobbers, on Friday recommended long-pull buying of the best American common stocks."

In his brief time in office, President Roosevelt has made a good impression. It should be remembered that he is the leader of no partisan group, no special interests, no single party, but the president of all the men and women and children of all the United States, regardless of race, creed or color. He should be and doubtless will be accorded spontaneously "the consecrated cooperation" for which he asks.

PULPWOOD REQUIREMENTS

The Timber Conservation Board, in making public its latest report, states that pulpwood requirements have increased rapidly in the past, equally nearly 8 per cent per year. Their increase is related to the increased use of paper, the greater use of wood pulp in manufacturing paper to the virtual exclusion of other materials except for papers of special qualities, and to a slight degree to the use of wood pulp in other commodities than paper, as for instance rayon, cellophane, and plastics. American consumption of certain kinds of paper give evidence of approaching saturation, i.e., a point beyond which use increases will maintain a constant relationship to population trends. This is generally true of the papers used for cultural purposes. Papers used for physical or mechanical purposes have a better chance to maintain past rates of increase, through substitution for other commodities, as box boards for lumber, and veneer insulation boards for sheathing lumber, and food containers for metal cans.

In these fields substitution of pulp products in the past has been relatively easy and the increased tonnages of paper production have been marked. Future substitution gives evidence of being more difficult and the possible tonnages tend to become smaller.

In so far as wood can compete, pulpwood consumption tends to follow paper consumption. Since paper consumption tends to decrease in its rate of increase, pulpwood use will follow except as it may be needed in other products. Although the use of wood pulp in cellophane, rayon, and plastics and in other products of similar character is important from the point of view of the commodities produced, the wood requirements are as yet practi-

cally insignificant in the national wood use. Experience indicates that a far greater and wider use of pulp for such purposes is needed to affect the national timber supply.

However, this is all leading to a conception of wood as a material readily susceptible to transformation as contrasted to use in its original form, and this new conception itself offers unlimited prospects for new requirements.

Imports of pulpwood vary from year to year but have a consistent upward trend. The quantity of wood used to supply the United States with paper doubled from 1919 to 1929, but only one-third of this expansion was supplied by our own pulp and pulpwood industries.

However, this growth in imports has not affected, and is not likely to affect, our paper consumption. Considering the development of new pulpwood regions and species, both in this country, and in foreign countries, it may possibly be said that pulp resources have increased even faster than requirements. At present there is no indication of a future shortage of paper, in the problem of keeping the pulp industry at home. To what extent the industry can be kept at home is a question that will have considerable bearing on what our future pulpwood requirements will be.

Interest in Savannah Meeting Growing

In response to the editorial recently run on page 26 of the PAPER TRADE JOURNAL of February 23, 1933, a number of individuals have made tentative reservations to go to Savannah on April 28th to attend the meeting of the Georgia Forestry Association and to view at first hand the developments in the manufacture of white paper from Southern pines at the Georgia State Laboratory under the direction of Dr. Herty and W. G. MacNaughton, formerly of the International Paper Company.

A remarkably low travel cost has been provided to enable all who may want to go, to join the party which will probably exceed 100 in April. The complete cost of the round trip including transportation, stateroom and meals, will be $25 and the headquarters hotel has declared a special bargain rate of $2 single and $3 double rooms, for those who take the trip.

Aside from the business benefits of the trip an opportunity is provided to enjoy a brief vacation, a delightful sea voyage and to see one of the most beautiful cities in the South, Savannah, the Azalea City.

Reservations for the trip are being received daily by R. G. Macdonald, secretary of the Technical Association of the Pulp and Paper Industry, 370 Lexington avenue, New York. Everyone interested in newsprint, book paper, sulphite pulp and papers and mechanical pulp should take advantage of this splendid opportunity to find out the possibilities of expansion of the industry in this section where trees grow so rapidly.

To Head Logging Department

[FROM OUR REGULAR CORRESPONDENT]

EDMUNTON, N. B., March 7, 1933—R. G. MacFarlane has been appointed manager of the Lumber and Logging Department of Fraser Companies Limited, and Restigouche Company. This Department has charge of all lumbering and logging operations carried on by these companies.

From the European View Point

Glasgow, Scotland, February 17, 1933.

Editor, PAPER TRADE JOURNAL:

Perhaps you will allow a sympathetic observer of American affairs to comment on the issues raised in Mr. Alfred Bunge's letter to you of January 22.

That letter reflects the effect on his particular trade of the world influences now bearing so hardly on American commerce in general, and it is to these world conditions that we ought to address ourselves.

The U. S. A., probably for the first time in her remarkable history, finds herself a creditor nation; and to an outsider she seems unwilling to accept the consequences which that fact imposes. Since the war, she has been a lender on a large scale and her loans took the form of goods as the movements of gold over the last few years clearly show. How is she to be paid back?

Mr. Bunge does not want to be repaid in paper or pulp and we may be sure the Mr. Bunges in other trades are no more anxious to see their home market deluged by foreign imports. So America says:— "Pay us in gold"; but, as the debtor countries can only get gold by trading with other countries, America is, in fact, asking those other countries to accept in the interests of the U. S. A. a policy which she herself will not tolerate, viz. to provide the gold for the debt payments by exposing their own industries to the shock of the surplus goods with which the world is burdened.

As those other countries are themselves, however, trying to export and not to import, the whole thing is proved to be impossible and so we come back to the beginning.

The debtors can only pay by a method within their capacity, viz. by goods. It is perhaps hardly fair, therefore, for Mr. Bunge to suggest that the U. S. A. will not get paid; she is, in fact, refusing payment, or at any rate dictating an impossible method of payment; and it comes to this:—she must lower her tariffs and thereby allow the entry of foreign payments in the form of goods or in her own interest cancel the whole business altogether.

These seem to be the impregnable facts of the situation and the hope of the world appears to lie in an early realization of them by the citizens of your great Republic, for the writer is convinced your economists and bankers know all about them already.

Yours etc.

118 Queen Street. THOMAS AITKEN.

U. S. Second Best Customer

United States newspapers proved the second best customer next to Great Britain for Finnish news print during 1932 taking 42,580,127 kilos, according to a report to the Commerce Department from Commercial Attache O. S. Watson, Helsingfors.

Total Finnish news print exports for 1932 were 200,947,834 kilograms compared with 190,880,092 kilograms in 1931, an increase of 10,067,742 kilograms, it was stated.

Finland is one of the important news print producing countries, supplying about 4 per cent of the world production. Prices of Finish news print are very competitive, it was stated, the average price for 1932 being slightly over $26.00 a short ton.

Finnish news print is sold all over the world. The leading importing countries in order are as follows:

Great Britain, United States, France, Brazil, Denmark, Argentina, China, Netherlands, Germany, Belgium, Egypt, British East India, Spain, West Indies and Portugal. Finmark is equal to about 1.47 cents, U. S. a kilogram is about 2.20 pounds.

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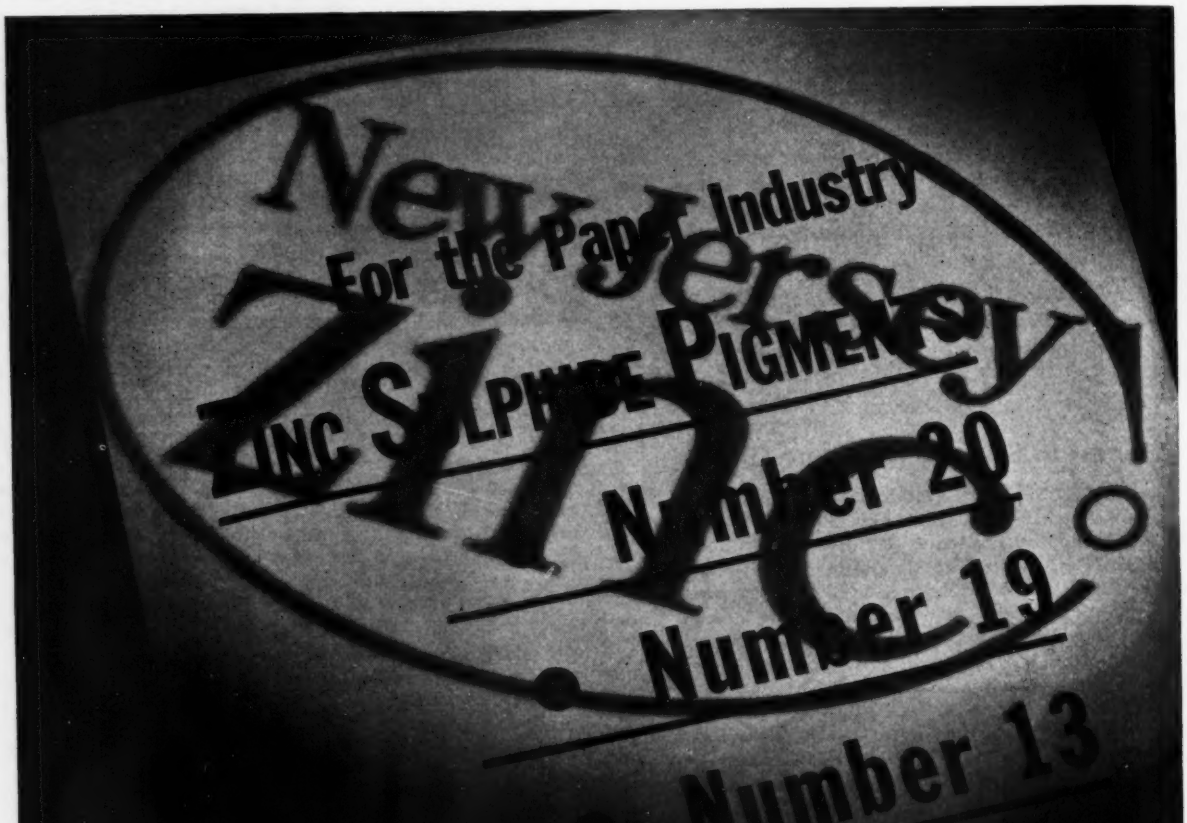

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Scope of A Patent*

All patents with the exception of those for designs have the same duration, namely, seventeen years. However, they vary quite widely in scope or breadth. Many patents are of such narrow or restricted scope that they cover only the specific devices disclosed in the specifications. Others are of such breadth that they include within their scope substantial variations. A relatively few patents are of such broad inclusive scope as to cover devices which show very little, if any, outward or physical resemblance to each other or to the devices disclosed in the patents.

In the case of a broad patent, the device described in the specification is deemed as only one of many possible forms of construction in which the inventor may embody his inventive concept, while in that of a narrow patent the disclosed device is considered either as the invention itself or as one of a relatively few forms in which the concept may be incorporated. Variations in the form or structure of the device disclosed in the patent which fall fairly within the scope of the patent are known in the patent law as "equivalents." It follows that the broader the patent, the greater or wider its range of equivalents and the greater the degree of protection afforded the patentee against those who would appropriate the sum and substance of his inventive ingenuity. However, the broader the patent, the more likely it is to be held invalid when sued upon. For conceivably a broad patent is more likely than one of restricted scope to embrace devices and things which are either old or which do not constitute parts to be sustained by the courts, but it can be more easily evaded by a competitor.

It has often been stated that an inventor is entitled to a patent commensurate in scope with his advance over the prior art. Actually this is an ideal which is achieved in only a very small proportion of cases involving broad inventions. The reason is that a patent does not necessarily cover what the inventor may have actually invented. Nor does it necessarily cover what is described in the specification of the patent. What a patent does cover is what is properly described in the specification and adequately defined in the claims. No matter how valuable, new and novel the actual invention or discovery, no matter how accurate the disclosure and the description in the patent, the inventor must adequately cover and define it by means of his claims; otherwise, he will be deemed to have intended to abandon it or dedicate it to the public. Hence, it follows that the claims of a patent may be so restricted as to cover less than what the patentee actually discovered or invented. Likewise, the claims may be limited to one particular form of the device disclosed excluding all other forms though they may also embody the invention.

In order to avoid unduly restricting the patent, it is the practice to include claims drawn in the broadest permissible language and omitting all but the most indispensible elements. However, to guard against the possibility of including within the scope of the claims devices old in the art, the patent should also include claims couched in specific language. Furthermore, the inventor should insist upon claims restating the inventive thought in a reasonable number of ways and to claims covering each novel and useful aspect, part, combination, subcombination, etc. of his invention. For each claim is considered a separate and independent invention. One may be valid, all the rest invalid. But the claim that is good remains good, provided the patentee seasonably disclaims those that are bad. Likewise, one claim may be infringed and the others not. In other words, the patent does not stand or fall as a unity—each claim is in effect a separate patent and a competitor cannot escape liability so long as the patent contains one valid claim covering his device.

The importance of including both broad and narrow claims in the patent is very well brought out by the case of Louis Schopper et al v. Star Brass Mfg. Co., 34 Fed. Rep. (2nd) 664, involving Patent No. 1,193,613 to Riegel for an apparatus for ascertaining the condition of paper pulp. It was well-known at the time of the invention that if a sample of paper pulp from the beater is poured on a screen, some of the water technically known as "freeness water" runs through almost immediately but that the rest of the water runs through slowly. Riegel's apparatus consisted of a vessel having two orifices, one for the "freeness water" and the other for the remaining water. By collecting the water from the two orifices in separate vessels, it was possible to judge the condition (freeness) of the stock by the relative amounts of water in the two vessels. The defendants utilized the same principle but instead of comparing the two amounts of water, they compared the amount of "freeness water" with the sample, thus eliminating one of the collecting vessels. Several claims specifically included both collecting receptacles and were obviously not infringed. Other claims, fortunately, were broad enough in terms to cover the feature of keeping the water from the two outlets separate without including the two collecting vessels. The defendants were therefore held as infringers.

In ascertaining the scope of a patent, the courts consider the following elements which are here set down in the order of their relative importance:

1. The language of the claims
2. The disclosure, including the specification and drawing.

* This is contribution No. 17 from the Patents Committee of the Technical Association of the Pulp and Paper Industry, C. W. Rivise, Chairman.

3. The prior art, i.e. all the patents previously granted along the same line together with all other technical literature bearing on the subject.

4. The proceedings in the Patent Office leading to the grant of the patent.

5. The history of the invention.

6. Other factors such as the extent of use of the invention, its acceptance by the trade and such conduct of the patentee after the grant of the patent as may indicate that he considered the patent to be of limited scope.

The Masonite-Celotex patent suit discussed in Bulletin No. 16 (see PAPER TRADE JOURNAL of December 1, 1932) is an excellent illustration of the manner in which courts usually ascertain the scope or breadth of a patent.

Industrial Research Laboratories

The Research Information Service of the National Research Council is preparing a revision of its "Industrial Research Laboratories of the United States, including Consulting Research Laboratories," the fourth edition of which was published in 1931 and contained over 1,600 such laboratories.

This bulletin is the only list of industrial research laboratories known to the compilers (Clarence J. West and Callie Hull) and is undoubtedly used by many persons, not only as a source of information concerning such laboratories but also as a mailing list for important announcements concerning new apparatus and processes and for compilations of interest to research workers in industrial fields.

In addition to the 1,600 laboratories already known, it is very desirable that additional laboratories be listed, if such are in existence. While every effort will be made to locate such firms, it is felt that many will be overlooked unless they are called to the attention of the compilers.

If the reader of this note is a member of a firm maintaining a research laboratory and if it is not known whether the firm in question is already listed in the previous bulletin, it is hoped that a request will be forwarded immediately to the Research Information Service, National Research Council, Washington, D. C., requesting a questionnaire, in order that the forthcoming bulletin may be made as complete as possible. The listing involves no financial obligations on the part of any firm and may be of considerable value, since this publication is recognized by all familiar with it as a valuable source of information regarding industrial research activities in the United States.

The data included in the bulletin are made up of the name and address of the firms, the research directors and the research problems engaging the attention of the laboratories. There are also included an alphabetical list of research directors, a subject index of research interests and a geographical index of firms.

In order to avoid inquiries regarding the appearance of the bulletin, it may be stated that the bulletin will not be available for distribution before September, 1933.

Pulp Tariff Advocated by Marinette

APPLETON, WIS., February 27, 1933—The county municipal board of Marinette County, in which paper mills are located at Peshtigo, and Marinette, Wis., and Menoninee, Mich., across the river, has adopted a resolution declaring that the importation of wood pulp was causing unemployment relief needs to become greater because of the curtailment of pulp wood logging. Representatives in Washington will be so informed. The resolution supports the move of pulp manufacturers to obtain a countervailing duty on pulp imports to offset the foreign currency differential.

New Jersey Zinc Company Joins TAPPI

The New Jersey Zinc Company, which produces a complete line of zinc pigments possessing interesting possibilities for paper, particularly in the field of opacity combined with brightness and whiteness, has recently become a member of the Technical Association of the Pulp and Paper Industry.

This company has pioneered in the development of zinc products. The research laboratories at Palmerton, Pa., the largest in the world devoted to white pigments, are unusually well equipped to carry out not only the fundamental investigation of pigments, but also to study their application in the several industries served. An arrangement at The Institute of Paper Chemistry in Appleton, Wisconsin, involving special research on the use of zinc pigments in paper, followed by commercial runs in paper mills, has rounded out the research work in the paper industry. A paper covering this work to date was presented before the annual meeting of TAPPI in New York on February 15 last, and is being reprinted in the March 9 issue of THE PAPER TRADE JOURNAL.

The New Jersey Zinc Company manufactures both zinc sulphide and zinc oxide materials. The common pigments of zinc are white, and are non-toxic, and many are characterized by a high refractive index, which makes them of interest in securing high opacity, even though the paper be loaded with but a fractional part of these pigments in comparison with ordinary fillers. The New Jersey Zinc Company constitutes a complete operating unit which enables it to provide quality and uniformity of products, service, and progressiveness in development to the fullest extent possible.

The zinc sulphide pigments are added either in the same manner as ordinary loading agents or fillers; or used in coating mixes where they impart a remarkable good color. These pigments present no difficulties in incorporating in the beater, or with sticking of the paper on the rolls or felts. They are aso compatible with the various types of dyes and colors commonly used in the paper industry.

In order to use these zinc pigments most efficiently when they are added directly to the beaters, it is desirable to operate on a closed white water system. Under such conditions zinc pigments, although non-toxic, are effective bactericides and thereby prevent slime formation. These pigments similarly exert a mild antiseptic action when used in coating mixes and markedly delay souring.

The paper industry will be contacted from The New Jersey Zinc Sales Company offices located in New York, Chicago, Cleveland and San Francisco. The technical service division of the sales department, as its name implies, is available to aid customers in the application of the Company's products, and warehouse stocks are carried in locations convenient to all paper making centers.

Straw Paper Mill for Edmonton

Establishment of a straw paper plant at Edmonton, Alberta, is forecast for the immediate future. A group of Edmonton business men are interested in the venture which is proposed by R. A. Barron. Mr. Barron is well known in Edmonton, having resided for years in that city while engaged at the Parliament Buildings as secretary for the provincial department of education. He has resided in California for the past few years, and has studied straw-paper plant operations in various sections of the country. The proposed plant will commence with a $50,000 unit, which will be expanded as conditions warrant.

Metallic Linings for Digesters*

By Wallace C. Johnson[1]

Abstract

Installations of chrome nickel pipe and digester fittings justify the use of this material for digester linings. Open top tanks have been made acid proof by lining with chrome nickel sheets. Attempts that have been made to provide for difference in expansion between chrome nickel linings and steel shell. Failures wherever lining has been only partially attached to shell. The difference in expansion between lining and shell must be provided for. That it was finally accomplished by making a composite plate, using an intermediate bond sheet to permit chrome nickel to expand independently of steel base to which it is welded. That this composite plate can be fabricated by arc welding into either a lining or a new digester.

Use of Chrome Nickel Alloys on Digesters and Acid Lines

That some of the popular chrome nickel alloys or stainless steels as they are commonly referred to could be used in place of acid proof brick, so as to form permanent digester linings, is substantiated by numerous installations where these corrosion resistant alloys are constantly in contact with sulphite liquor.

In 1929 the first all welded chrome nickel pipe was installed in a 10-inch line at the mill of the Spruce Falls Power & Paper Company.

This was soon followed by other installations of welded pipe in the mill of the Anglo-Canadian Pulp & Paper Company and in circulating lines used on digesters in the mill of the Abitibi Power & Paper Company, together with glands and strainers made from heavy chrome nickel plates, and also digester necks as installed by the Fletcher Paper Company, Alpena, Mich.

Proposed Digester Lining

From the results of these numerous installations, all of which have rendered very satisfactory service, it seems reasonable to assume that there would be many advantages in lining digesters and acid tanks with this same type of non-corrosive metal.

Benefits of Metallic Linings

A metallic lining that is not attacked by any concentration of sulphite liquor would enable the digester to be continuously operated without costly shut-downs that are now necessary in order to replace brick linings having an indefinite life. By eliminating the brick linings and using a thinner metallic lining the capacity of the digester would be increased at least 6 per cent. This would enable the digester builder to materially reduce the amount of steel used in a digester of equivalent capacity. By replacing brick with a smooth steel surface, thereby reducing friction, you would not require as much pressure to blow the digester. This reduction of pressure would reduce the amount of sulphur dioxide which is blown out with the chips, resulting in a saving in sulphur used. Pulp made in this manner would be free from particles of the brick lining that tend to increase the ash content, which would make it easier to bleach the pulp.

The reason that linings are suggested, rather than the construction of digesters from heavy plates of this material is two-fold.

First, because there are already too many comparatively new steel digesters installed to consider the construction of additional digesters.

Second, the high cost of heavy chrome nickel plates, averaging ten times that of plain steel, makes it far cheaper at present to line a heavy steel digester with brick than to consider the use of solid stainless steel plate. Although pressure vessels of the maximum diameter that can be shipped by rail have been fabricated completely from stainless chrome nickel plates, entirely by welding, their cost was so great that the use of even heavier plates could not be considered for wood pulp digesters.

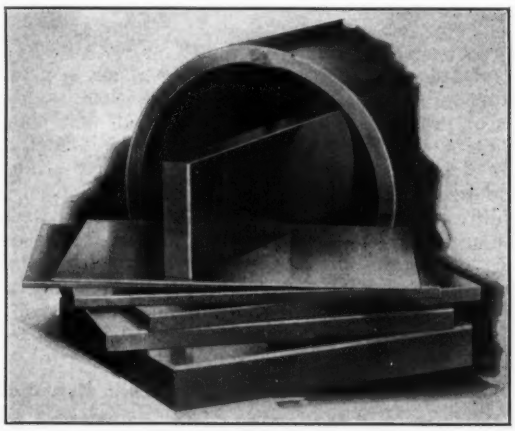

FIG. 2

Lining of Open Top Tanks

Open top tanks that are not required to hold pressures and that are not subjected to fluctuating temperatures have been successfully lined with chrome nickel steel sheets. Welded acid proof linings in wooden tanks were installed in 1928 under the supervision of the writer in the plant of the Du Pont Viscoloid Company at Arlington, N. J. (Fig. 1.)

Shortly after that a large eastern refinery made use of the extreme corrosion resisting properties of these steels by lining the inside of soaking drum heads, using plates

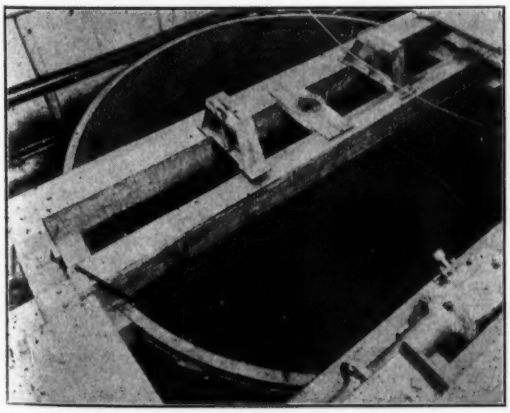

FIG. 1

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.
Contribution of the TAPPI Materials of Construction Committee.

[1] President, The Plykrome Corporation, 1 Wall Street, New York, N. Y.

$\frac{3}{16}$ inch thick, cut and pressed into orange peel sections that were inserted through the manhole opening and welded in place from the inside of the vessel so as to protect the steel heads from corrosive fumes. These stainless plates, however, were not welded to the steel and were, therefore, free to expand into the rest of the still that was not lined.

Attempts to Line Digesters

A great deal of time and money has been spent in attempting to successfully line steel digesters and other forms of pressure vessels with sheets and light plates of these chrome nickel steels. The one chief difficulty that has so far made it extremely difficult to successfully line a large digester or pressure vessel with this material is the wide difference in the coefficient of expansion between the stainless chrome-nickel linings and the steel shell of the vessel. Since the chrome nickel plates will expand 50 per cent more than steel, under the cooking temperature, it is practically impossible to make a lining remain acid proof by only partially welding it to the steel shell so that it will not eventually rupture and leak.

Method Used to Take Care of Difference in Expansion

There have been various methods employed to permit the stainless or non-corrosive lining to expand under an increase in temperature independently of the steel shell which it must protect from the acid.

Spiral expansion joints in the form of corrugations have been suggested. One digester was lined under the supervision of the writer by tack welding the chrome-nickel sheets to the steel shell on 24 inch centers so as to allow the lining to expand between these points. Another method was to curve the edges of the stainless sheet inward so that when it was welded to the edge of the next curved sheet, thereby forming an acid proof lining, it would permit the stainless sheet to expand, which it must do even before the steel shell becomes hot, because it is the first to receive heat as it is developed inside of the lining in the process of producing wood pulp.

Although these measures afforded relief and permitted a certain amount of movement in the stainless steel lining, they can only be considered temporary measures. Obviously, wherever the lining is held to the steel shell only at intervals, it must eventually set up strains and stresses wherever it is so attached. These stressed areas will eventually either crack, or due to fatigue become less

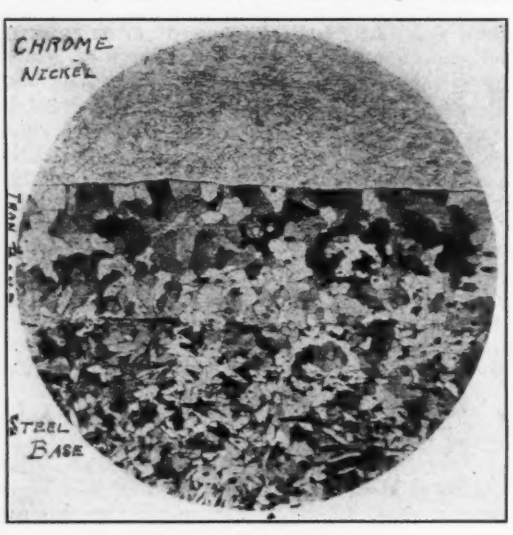

FIG. 3

FIG. 4

resistant to the corrosive action of the acid, causing an accelerated attack at this point of weakness, eventually permitting the acid to reach the plain steel shell. Even linings that are not spot or tack welded to the shell, but apparently are allowed to float, or are supported by a balanced pressure in the form of a neutral liquid imposed between the lining and the steel shell, must nevertheless be attached to the shell through the numerous pipe and manhole connections that must be made through both the steel shell and the chrome nickel lining.

Chrome Nickel Must Be Made Integral Part of Steel Base

Having seen all of these suggested remedies eventually fail, it occurred to the writer that the successful use of chrome-nickel as a digester lining must depend upon a means by which the difference in coefficient of expansion between these two metals would be provided for. After more than a year of research and numerous experiments we decided that the only way to accomplish this was to attach the chrome nickel corrosive resistant sheet to the steel base over its entire area in such a manner that it would remain at all times an integral part of the steel, and at the same time be allowed to expand slightly when the temperature of the two metals was increased.

Accomplished by Composite Metal

This was finally accomplished by welding together, in the absence of air, under heat and high pressure a combination of an extremely thin chrome-nickel sheet not more than .050 inch thick to a mild steel plate by inserting between the two a bond or fusion sheet of commercially pure iron. (Fig. 2.) The function of this bond sheet as illustrated in Fig. 3 is to become fused to the different materials that it must hold together, and since its yield point is considerably lower than either of the other two, it permits the thin chrome nickel steel sheet to expand and contract, by an intercrystalline slippage, independently of the steel base to which it is welded. Repeated heatings and coolings by raising this composite metal to a red heat and quenching it in water, show no sign of causing the stainless surface to crack or to in any way tear loose from the steel base to which it is attached. This ductile weld between the chrome-nickel and the steel base enables the composite plate to withstand the severe strains caused by bending the plate so as to fit the steel shell or necks of a digester.

Such a method for providing for the difference in coefficient of expansion, and at the same time holding the

chrome nickel to the steel base at all points, appears to be a solution to the problem that has so far prevented the use of a successful metallic lining in a sulphite digester.

Since a composite metal can be produced at less than half the price of solid chrome nickel it can be extensively used to line existing digesters, acid tanks, etc., and may also be considered as a material from which to construct new digesters as they are required.

This composite stainless steel which we have termed Plykrome, can be readily bent and formed similar to ordinary steel. It is particularly well adapted to the use of electric arc welding for fabricating it into an acid-proof lining or digester shell. Where plates not heavier than $\frac{3}{16}$ inch are used a high-chrome, high-nickel welding rod which has been developed for this purpose should be used to weld together both the stainless steel surface and the steel base. Wherever heavier plates are employed, necessitating the use of more than one bead of weld, ordinary steel rods may be used to join together the edges of the steel sides, with a chrome nickel rod for joining the edges of the stainless steel surfaces. Fig. 4 shows a welded box formed from heavy Plykrome plates to hold hot acid.

The Use of Zinc Pigments in the Paper Industry*

By Otto Kress[1] and Howard M. Cyr[2]

Abstract

A report of an investigation made at the Institute of Paper Chemistry on various zinc pigments for use as paper loading material. It was found that the zinc sulphide pigments give paper excellent opacity, whiteness, brightness, and good printing surface, and prevent slime formation.

Fillers such as clay, talc and calcium sulphate, etc., are used largely in the paper industry to add certain desirable characteristics to the paper and are in no way to be considered as adulterants to reduce the cost of the paper. The introduction of fillers aids opacity, increases the smoothness of the surface of the paper, and thereby secures a better printing surface. The color of the sheet is improved, rattle can be destroyed, and a softer sheet can be produced by the proper use of the filler. These desirable characteristics are secured, however, only when the filler is used in fairly high percentages, and this results in certain drawbacks, chief of which is a decrease in strength and size fastness.

The New Jersey Zinc Company has been conducting at the Institute of Paper Chemistry a co-operative study to determine the suitability of various zinc pigments (which at present are used largely in the paint and rubber industries) for use in the loading and coating of paper. The investigation, which has been under way for a period of approximately nine months, consisted first of a study of these products in the laboratory and later of mill trials on typical grades of paper.

All the common pigments of zinc are white, and are non-toxic, and many are characterized by a high refractive index, which makes them of interest in securing high opacity, even though the paper be loaded with but a fractional part of these pigments in comparison with ordinary fillers such as clay.

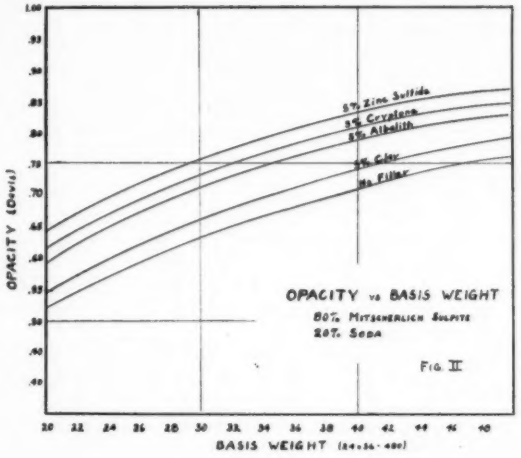

Fig. 2

Variations in opacity of pigmented papers due to changes in basis weight.

The investigation has been restricted to a study of the two important types of white zinc pigments: (1). The zinc oxide pigments, and (2). The zinc sulphide pigments: Zinc sulphide pigment No. 20 (known as XX zinc sulphide), Zinc sulphide pigment No. 19 (known by the trade name "Cryptone") and Zinc sulphide pigment No. 13 (known by the trade name "Albalith").

The first material, zinc oxide, possesses a high refractive index and has a splendid white color, but, in view of its ease of solubility in alum solution, is not of interest as a loading agent; it is, however, of interest as a coating material. Commercial coating trials were made comparing the zinc pigments with common coating materials such as clay, chalk, satin white, et cetera. The zinc pigments gave high finish, a brilliant color, and superior opacity.

The essential pigment in the zinc sulphide group is, of course, zinc sulphide, which is present in different amounts in the three pigments named, the remainder being "blanc fixe" or barium sulphate, which in Albalith is co-precipitated with the zinc sulphide to give an equal number of moles of each. Where most striking results and brightness must go hand in hand with the smallest pigment content, XX zinc sulphide has been found to be the most desirable material. In cases where more pigment can be used and where certain surface qualities are desirable, the zinc sulphide pigments No. 19 and No. 13 (Cryptone and Albalith) have been found preferable.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.

[1] Member TAPPI, technical director of the Institute of Paper Chemistry, Appleton, Wis.

[2] Member TAPPI, chief of the Fundamental Pigment Section, Research Division, The New Jersey Zinc Company, Palmerton, Pennsylvania.

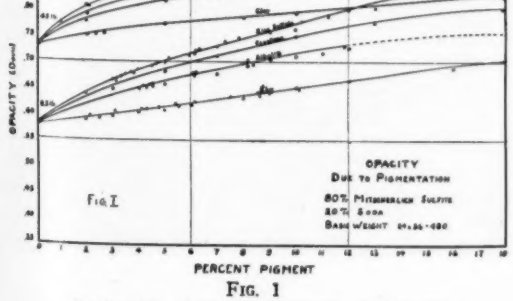

Fig. 1

Opacity due to various percentages of pigments.

Paper Opacity Factors

The most striking quality which these pigments give to paper is opacity, combined with a very bright whiteness. This property is largely due to the high refractive index of zinc sulphide. If materials commonly used in the paper industry are examined as to their refractive indices, they fall in the order shown in Table I:

TABLE I
REFRACTIVE INDICES

Zinc sulphide	2.37
Zinc oxide	2.01
Barium sulphate	1.65
Clay (Kaolin)	1.56
Calcium carbonate	1.56
Talc	1.55
Paper (Cellulose)	1.53
Gypsum	1.53
Tung oil	1.52
Linseed oil	1.48
Paraffin	1.43

Opacity can also be obtained by the use of dyes or colored pigments, but this opacity is due to absorption rather than to refraction of light and results in a dulling down, or opacity at the expense of brightness in color. Fair comparisons of opacity should be made at the same degree of brightness. The opacity due to a pigment is also influenced by its particle size. With a decrease in the size of pigment particles, there are, of course, more particles per unit weight and therefore more surfaces through which light must pass and be refracted. Research has shown that opacity increases as the particle size decreases down to a certain optimum value, which is about one-half the length of a light wave itself. The manufacturers of these zinc sulphide pigments control the particle size to give the best opacity.

A large part of the experimental work at the Institute of Paper Chemistry has been that of determining the exact effect of these zinc sulphide pigments upon opacity. At the beginning, methods of measuring opacity were carefully investigated, and, in view of the difficulties experienced with the ordinary opacimeter, advantage was taken of the loan of a new type of opacimeter developed by Dr. M. N. Davis of the Kimberly-Clark Corporation. This instrument has the advantage of ease of manipulation, avoidance of eye strain, and the obtaining of concurrent results not only when the paper is examined on different days but also when the examination is made by different operators.

The results of this opacity investigation can be shown best by a series of curves (Figs. 1 and 2). These curves have proven very useful in predicting the effect of pigmenting certain papers. Supposing a manufacturer wishes to market a 25 pound paper having an opacity of 58 to compete with a 36 pound paper having an opacity of 67.

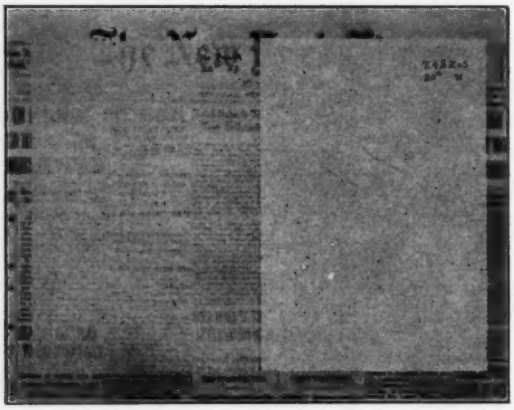

FIG. 3
Opacity of pigmented and unpigmented sheet.

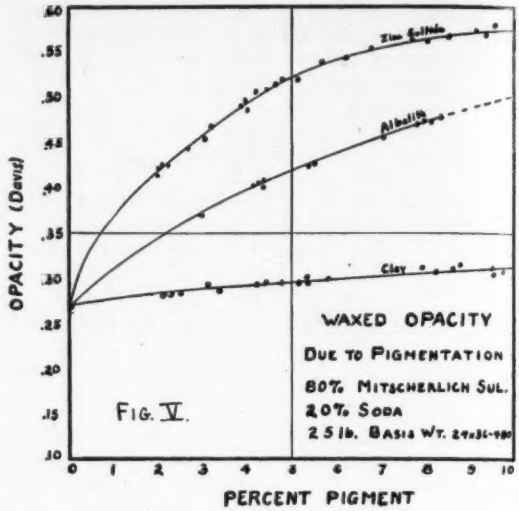

FIG. 5
Curve showing opacity of waxed pigmented sheet.

Examination of these curves indicates that the addition of 6 per cent of Albalith or 3 per cent of zinc sulphide will give him the desired results. It is obvious that clay cannot be used, since the large amount required would weaken and otherwise change the character of his paper. Commercial trials have demonstrated the accuracy of these tests. Some results are shown in Figs. 3 and 4.

When paper is impregnated with paraffin or oil, the influence of the pigment becomes even more evident. As was indicated in Table I, the refractive index of oil and paraffin is very close to that of paper fiber. Hence, practically no refraction occurs when light passes from the paraffin medium through the fibers. However, if a high refractive index pigment such as zinc sulphide is present in the paper, the light is refracted upon passing from the paraffin through the pigment and the opacity of the paper is thus retained. It is obviously useless to employ clay or any other filler with a refractive index around 1.5 if opacity is desired in a waxed or oiled sheet (Figs. 5 and 6).

If, in printing, an ink is used which permits the oil to penetrate slightly away from the pigment, a similar phenomenon occurs as in the paraffin impregnation. In the unpigmented paper, the section behind the print becomes transparent, causing "show-through," whereas the pig-

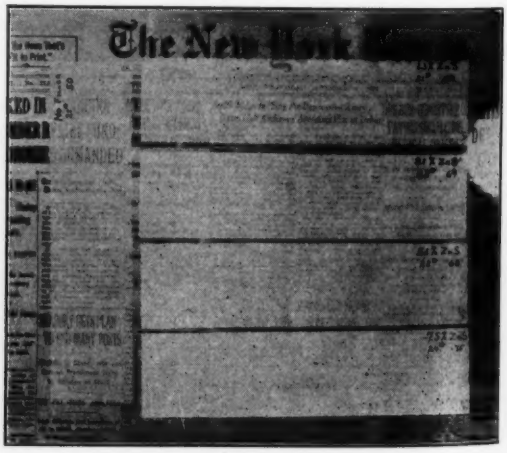

FIG. 4
Papers illustrating variation of opacity with pigment content.

mented sheet remains opaque in spite of the oil penetration. Fig. 7 shows an exaggerated diagram which illustrates this point. The results obtained by printing tests on zinc sulphide filled papers have corroborated this, and very satisfactory printed sheets have been made. As these pigments were primarily developed for the paint trade, their action toward printing ink is ideal.

When paper is calendered, the fibers are pressed together, thereby destroying the air-fiber interface, which results in loss of refraction and consequent loss of opacity. It is common knowledge that a highly calendered sheet is more transparent than one which has not been calendered. However, if the paper contains a pigment having a high refractive index, a change in medium still exists and opacity is upheld in spite of calendering. Of course, the calendering still lowers the opacity of the sheet because of the paper fibers themselves, but this is prevented to a large extent by the fact that opacity is imparted to the paper by the pigment. If the sheet contains a filler such as clay, which has approximately the same refractive index as the paper fibers, practically no change in medium exists when these particles are pressed into the fibers and a large loss in opacity results. Some experimental data on calendering pigmented papers are shown in Table II:

TABLE II
EFFECT OF CALENDERING ON OPACITY

Filler (per cent)	Original Opacity	Final Opacity	Loss in Opacity	Average Loss
5.5 Clay	64.3	48.2	16.1	
10.0 Clay	81.2	58.9	22.2	19.1
12.0 Clay	82.7	63.6	19.1	
7.0 Albalith	74.3	60.8	13.5	
10.0 Albalith	72.6	60.0	12.6	12.9
12.0 Albalith	84.0	71.4	12.6	
4.0 Zinc Sulphide	69.3	57.5	11.8	
9.0 Zinc Sulphide	88.8	76.1	12.7	12.2

Slime Growth Retarded

Another valuable property of the zinc pigments is their mild antiseptic quality when in suspension. The healing action of zinc oxide ointment on inflamed skin is well known. The action of zinc sulphide in killing bacteria or slime forming organisms is apparently very similar. Last June, a series of pulps was made up in the Institute laboratory, using the white water from a machine running a groundwood furnish. Into each kind of pulp was stirred a pigment or filler, and the closed jars were then placed on a warm shelf in the laboratory. Within two weeks, slime growth was observed in some of the jars; within a month, discoloration and decomposition were evident. To this day, however, those jars containing zinc pigments are as fresh and sweet smelling as when they were placed on the shelf (Fig. 8). This slime killing property of the zinc pigments opens up a new possibility in white water utilization. One objection to the complete closing up of a white water system has been that trouble would be experienced from the accumulation of slime and bacterial growth. This objection is now entirely absent for a mill making paper pigmented with zinc compounds. Additional investigative work on the antiseptic value of these pigments is being carried out and will be reported on at a later date.

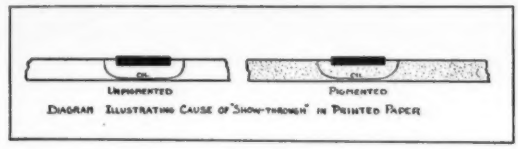

FIG. 7
Diagram illustrating cause of "Show Through" in printing paper.

There is one word of caution regarding this slime killing property which is made necessary by recent experience in a plant having moderate slime trouble. Upon use of these pigments, more slime spots were immediately noticed in the paper. The reason was soon obvious: the difficulty was caused by the cleaning up and loosening of the slime accumulations in the pipes and corners which were hard to clean out by ordinary means.

Still another interesting property of these zinc sulphide pigments was discovered which was rather unexpected. It was soon found, and repeatedly checked in both the laboratory and the mill, that paper suffered little or no loss of strength when pigment was introduced in reasonable amounts. This is exactly contrary to results obtained with loading agents of larger particle size. Apparently, the small size of the zinc sulphide particles neither interferes with fibrillation nor crushes the fibers upon drying and calendering. The microscope shows that the particles adhere to the side of the fibers rather than merely depending upon the filter action of the pulp (Fig. 9). This laboratory conclusion has been checked by plant tests.

Importance of Particle Size

In addition to the very small particle size, the factor of low specific volume of zinc sulphide should not be overlooked. A comparison of the specific volumes of common fillers is indicated in Table III.

The particle size of the zinc sulphide pigments is in the neighborhood of .25 microns (or .00001 inches); the particles are very uniform and the pigments contain practically no individual particles over 1.0 micron (.00004 inches) in

FIG. 6
Waxed papers illustrating variation of opacity with pigment content.

FIG. 8
Comparison of clay and zinc sulphide loaded stock showing effect of slime producing organisms.

TABLE III
SPECIFIC GRAVITY AND SPECIFIC VOLUME OF VARIOUS SOLIDS

Material	Specific Gravity	Specific Volume
Zinc Sulphide	4.00	.25
Zinc Oxide	5.60	.18
Barium Sulphate	4.45	.22
Talc	2.70	.37
Clay (Kaolin)	2.60	.38
Calcium Carbonate	2.60	.38
Gypsum	2.30	.43
Paper (Cellulose)	1.50	.67

diameter. A high grade filler clay was examined and found to range in particle size from the sub-microscopic to 40.0 microns (.002 inches). This is illustrated in Fig. 10, which shows a photo-micrograph of clay as compared with zinc sulphide; both are of the same magnification. An attempt to illustrate the small size of zinc sulphide pigment particles is shown in the diagram of Fig. 11, which represents the thickness of an ordinary piece of 20 pound bond paper (which is about .004 inches). If a row of zinc sulphide particles were strung through this sheet from one surface to the other, there would be 400 in line. Or, if a single particle were formed which extended from one surface to the other, it would weigh 64 million times as much as one individual particle. It will be seen from this comparison that no trouble can be experienced from the pigment settling out in chests or pipe lines. Neither can pinholes be caused from pigment particles being sucked out of the formed sheet.

The retention of zinc pigments in paper was expected to be low, due to their very small particle size. This was found not to be the fact, however, and surprisingly high retentions have always been observed. This retention cannot be due entirely to a mechanical filtering action. When the particle size of the pigment is compared under the microscope with the spaces between the fibers it seems incredible that any pigment could be retained. The retention which has been observed is possibly caused by some force similar to adsorption or attraction of the fibers for the particles. A commercial run, using pigment in a 20 pound bread wrap on a machine employing no recirculation, gave 50 per cent retention. Another run on a well beaten, slow stock gave 80 per cent retention. These figures represent the results on short experimental runs. On longer commercial runs, the retention is determined largely by the nature of the recirculating system and by the efficiency of the save-alls.

In addition to opacity, a very striking change in paper containing zinc sulphide pigments is its increased whiteness and brightness. In fact, these pigments act more like a bright white dye than like a loading agent. In several experimental runs, the opacity and brightness were increased to such an extent that the appearance of the paper was entirely changed. However, when more color was used to dull the brightness down to match the original sheet, an additional increase in opacity was noted. In this case, advantage is taken of the high refractive index of the pigment and of the light absorbing characteristics of the dulling agent. The brightening and whitening effect

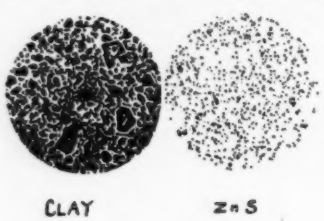

FIG. 10
Photomicrographs of loading clay and zinc sulphide at equal magnification.

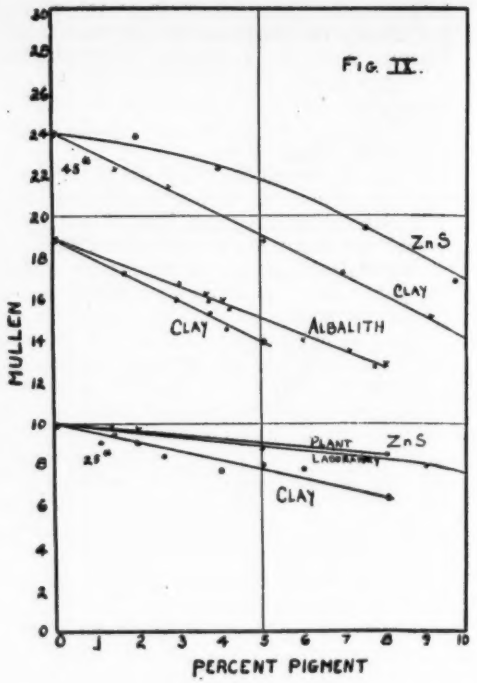

FIG. 9
Curves showing loss in Mullen strength through loading with varying percentages of fillers.

due to these pigments can be used to whiten the color of a partially bleached stock, thus partially compensating for a saving in bleach liquor.

Conclusions

In conclusion, the properties of zinc sulphide pigments which are of interest to the paper industry can be summarized as follows in Table IV:

TABLE IV
PROPERTIES OF ZINC SULPHIDE PIGMENTS

1. Opacity.
   a. In a coated sheet
   b. In a filled sheet
   d. In a waxed sheet
   e. In a highly calendered sheet
   f. In a highly beaten sheet
2. Whiteness.
3. Brightness.
4. High refractive index.
5. Small particle size.
6. Small effect upon strength.
7. Antiseptic property.
   a. Prevents slime
   b. Permits closed white water system
8. Good retention.
9. Superior printing surface.

This work, as described, has been largely a laboratory investigation. However, every result has been confirmed by plant tests, of which over twenty have been made with all kinds of papers. The main object of these commercial tests was to establish comparative results with the laboratory tests, as well as to watch for any of the numerous difficulties which might arise in the use of this new material. Fortunately, no troubles, either anticipated or unanticipated, were experienced.

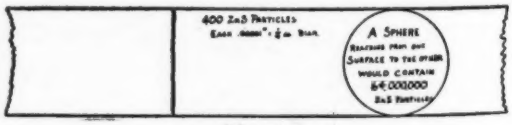

FIG. 11
Diagram showing size of zinc sulphide particles in comparison with thickness of 20 pound bond sheet.

The F. M. P. Method of Sulphite Pulping*

By Andreas Christensen [1]

Abstract

The installation of one of the first forced circulation and indirect heating sulphite systems in the United States is described in detail, together with a review of the benefits derived from this system.

Several articles have been published lately on the subject of forced circulation and indirect heating as applied to sulphite cooking. The object of this paper is to review briefly the introduction of this type of equipment at the Rhinelander Paper Company and discuss the advantages of cooking pulp by this method as compared with the conventional direct cook.

The adoption of forced circulation and indirect heating systems have been more general in Europe than in America. A survey made in August, 1931, of the principal producers of sulphite pulp in Europe revealed that 125 installations had been completed at that time covering a number of different designs all using forced circulation with either direct or indirect heating of the liquor.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.
Contribution of the TAPPI Acid Pulping Committee.

[1] Member TAPPI, sulphite superintendent, Rhinelander Paper Company, Rhinelander, Wis.

Preliminary Study

When during the summer of 1931 competition had forced our Company to consider seriously the closing down of our sulphite mill and to purchase Mitcherlich pulp for our requirements, we decided to equip one of our digesters with forced circulation and indirect heating equipment, and observe the results before a final decision was made in the matter. At that time no equipment manufacturer was offering such equipment for sale in America so we arranged with Fibre Making Processes, Inc., Chicago, to build a suitable system.

During the past 16 years that organization has completed numerous installations of indirect heating and forced circulating systems, in kraft and soda mills in the United States and Canada. The chief obstacle to the successful introduction of similar equipment in the sulphite business was to obtain a suitable construction material.

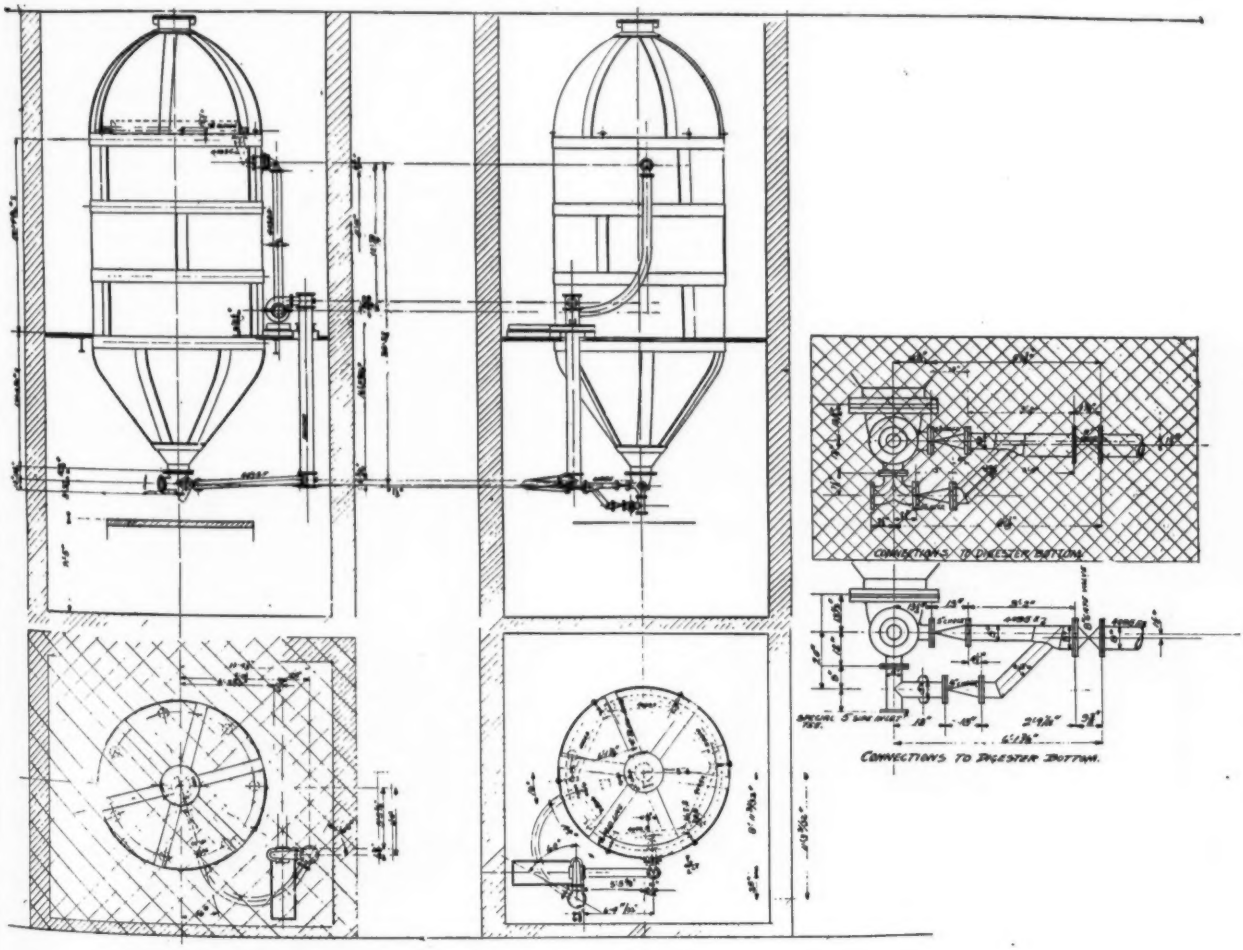

FIG. 1

With the introduction of chrome nickel steel this obstacle was removed and the problem of applying the knowledge gained in the soda and sulphate process to the sulphite mill was a comparatively simple one.

Chrome Nickel Steel

In 1930 and 1932 the writer presented papers at annual meetings of the Technical Association of the Pulp and Paper Industry, in which were discussed the results obtained with these alloys in our sulphite mill at Rhinelander, Wis.

The first fittings were installed in 1927 and during the past five years practically all bronze has been eliminated where hot calcium bisulphite is handled.

In designing the present cooking system this experience proved to be of great value, not only in selecting the proper alloys but also in guarding against stresses and electrolysis which in time might cause crystallization of the metal and render it subject to attack from the cooking acid.

The F.M.P. Cooking System

With all information available, both as to construction material, rate of circulation, size and type of heat exchanger, design of pumping unit and other data required, we were able to eliminate costly development work and could proceed immediately with the building of the first unit. That this proved to be correct may be realized by the fact that later installations, both at Rhinelander and also on the Pacific Coast, were exact duplicates of the first unit as far as general design was concerned.

Figure 1 shows the third unit installed on a 10-ton digester in the Rhinelander mill. Every precaution has been taken to make all parts of the system readily accessible for inspection. Both pump casing and bearing housing are split horizontally, the heat exchanger is placed in such a position that top and bottom covers may be swung open, and the tubes inspected without disturbing any connections.

The large screen inside the digester is built in several sections and each section is free to move in the brackets. Stresses are entirely eliminated by the use of stove pipe joints inside the digester and long-sweep bends outside. Simplicity in design, reliability in operation, every part readily accessible for inspection and repairs, coupled with low power and steam consumption, marks some of the outstanding features of this system.

The Circulating Pump

Fig. 2 shows the circulating pump installed on No. 2 digester at Rhinelander.

This highly efficient pumping unit consumes only 25 h.p. to maintain sufficient circulation to pass all the liquor in a 10-ton digester through the heat exchanger every 15 minutes.

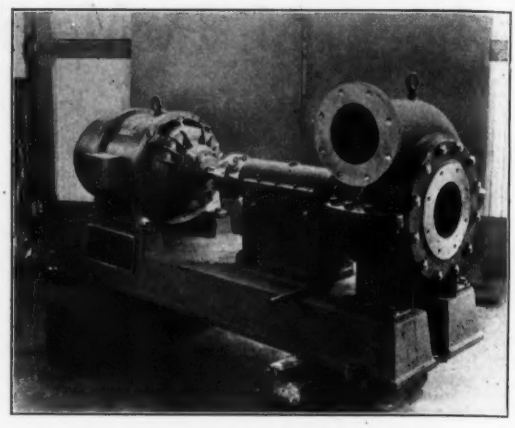

Fig. 2

The photo reflects the rugged construction. The long ball bearing entirely eliminates vibration. Bearing and packing gland housings are water-cooled and a gland provided with high pressure sealing water prevents acid from leaking out through stuffing box. The pump discharge is connected directly to top chamber of heater. This eliminates extra fittings and reduces friction loss to a minimum.

Heat Exchanger

The heater plays an important part in the operation of the cooking system and a careful study was made of various types before a selection was made.

Figure 3 shows a cross section of the heat exchanger and clearly demonstrates its many advantages as applied to this cooking system. The heater is of the single pass type, with the top tube sheet fixed and the lower tube sheet floating to take care of expansion and contraction.

In this manner the tubes are relieved of any strain and the danger of leaks developing, causing acid to contaminate the condensate, is very remote. Connection between the tube sheets and top and bottom acid chambers is so designed that should a leakage develop in the gasket, the acid will flow to the atmosphere. The tubes, which carry a high polish inside, are of a standard diameter and length; only the number of tubes are varied with different digester sizes, cooking schedules and steam pressures.

Due to the high velocity of the liquor and the polished tubes, formation of scale has been entirely avoided. Dur-

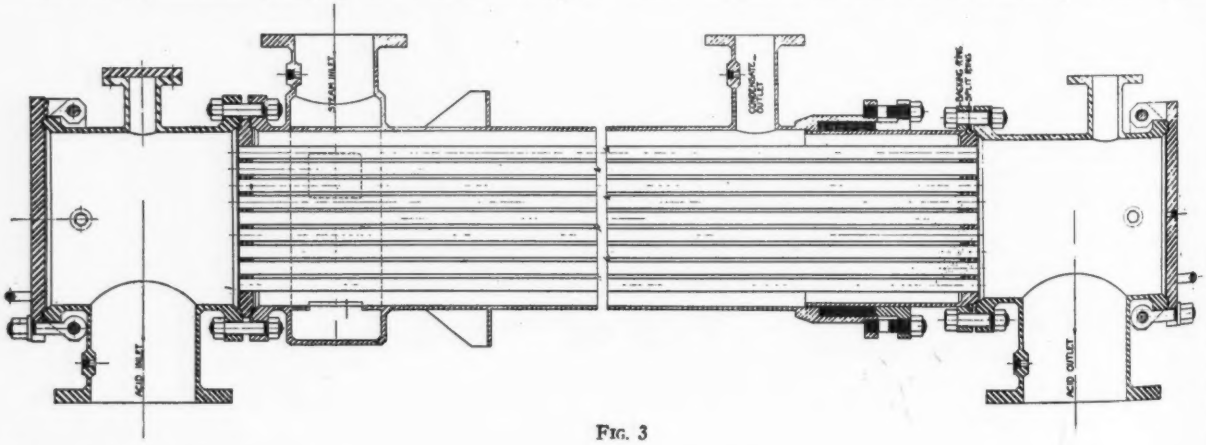

Fig. 3

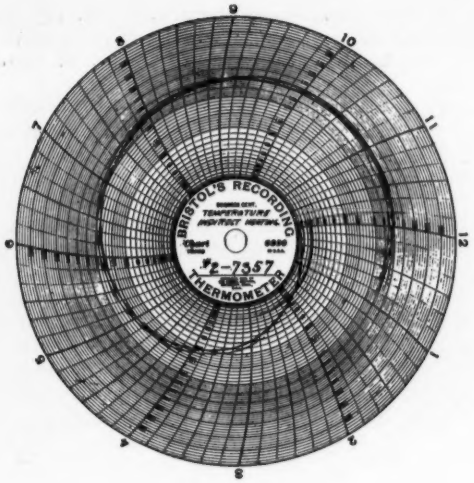

FIG. 4

ing eleven months continuous operation of the first unit at Rhinelander, no scale has formed on the tube walls and the only cleaning required has been done to remove a few pieces of scale that had lodged in the tubes. This scale formed on the inside of the strainer and was carried by the acid into the top of the heater.

By properly adjusting the composition of the cooking acid, formation of lime scale has been entirely eliminated in all parts of the system. To guard against a possible recurrence, the heaters have been equipped with a screen in the top chamber to retain pieces of scale and to prevent them from lodging in the tubes.

The heater is so designed that the tube bundle may be removed for repairs without disturbing the outer shell. It is also equipped with hinged swing covers facilitating inspection of the tubes.

CONDENSATE EQUIPMENT: The heaters are equipped with liquid level controllers to drain off the condensate without loss of steam.

All condensed water is collected in a tank, and from here it is pumped to the hot well in the boiler house.

To guard against the possibility of acid leaking into the condensate without the knowledge of the operator, the main line is equipped with a conductivity meter which keeps a charted record of the quality of the water.

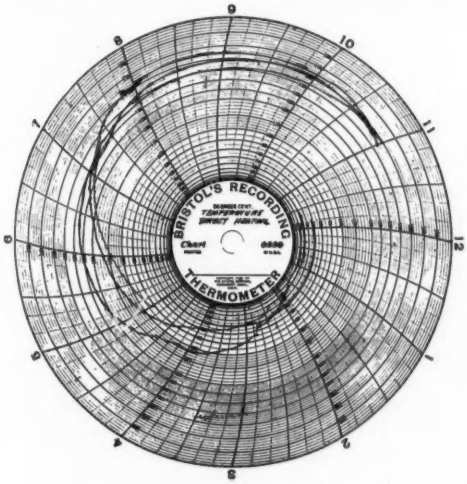

FIG. 5

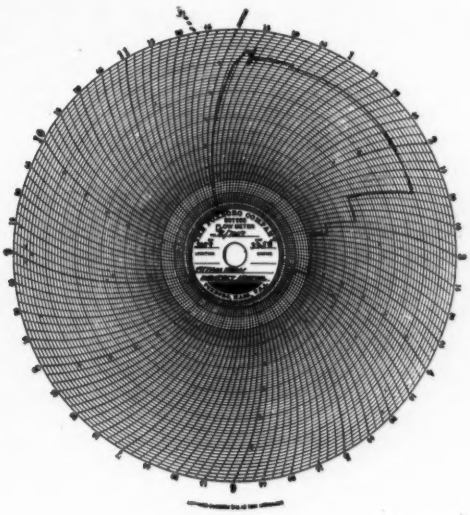

FIG. 6

Temperature and Pressure Control

With liquid relief eliminated, it became a simple matter to control automatically the pressure in the digester. A pilot operated balanced valve of standard make is inserted into the relief line. When the desired cooking pressure has been reached, this valve automatically opens from time to time and discharges sufficient SO_2 gas to maintain a uniform pressure. The steam admitted to the heater is now controlled by hand, using a recording flow meter for a guide, following a predetermined temperature curve.

Fig. 4 shows a temperature chart using a three-pen recorder with bulbs placed at top, bottom and middle of a 25-ton digester. This chart indicates clearly the uniform temperature in all parts of the digester throughout the entire cook.

Fig. 5 shows a temperature chart from the same digester before the installation of the cooking system.

Figs. 6 and 7 show respectively flow meter charts from the same cooks.

Fig. 8 shows a tentative layout for full automatic control of the digester, where high and low pressure steam is used. A duplex time temperature controller will regulate the flow of low pressure exhaust steam to the heater

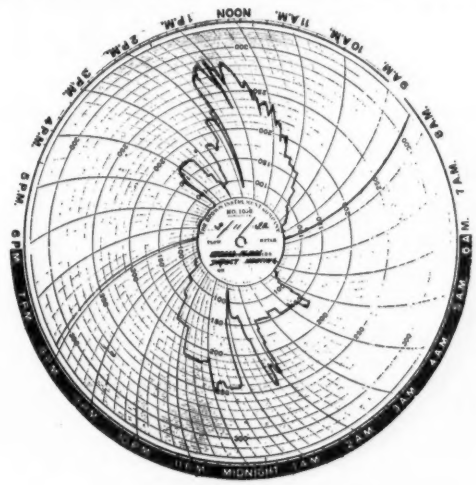

FIG. 7

as long as there is sufficient temperature to heat the liquor according to the cam schedule. When the point has been reached where exhaust steam will not supply sufficient heat, the controller will automatically admit steam from the high pressure line, and regulate the flow until maximum temperature has been reached.

The complete installation consists of: 1. A non-recording time temperature controller, 2. A two-pen recording thermometer, 3. A non-recording time pressure controller and 4. A pressure recorder.

To guard against the possibility of some of the chips in the top of the digester not being completely submerged and becoming charred, a small return line from the discharge of the circulating pump is connected to the relief line, spraying a quantity of acid into the top, through the relief strainer, while the digester is going to pressure.

A 2-inch return has proven sufficient to properly saturate the chips in the dome, even with wood containing only 18 per cent moisture. To take care of extreme cases, provisions have been made for pumping fresh acid directly to the digester, either through the relief line, or through another connection provided at the top for this purpose. One high pressure centrifugal pump with small capacity may be provided to serve the entire battery of digesters.

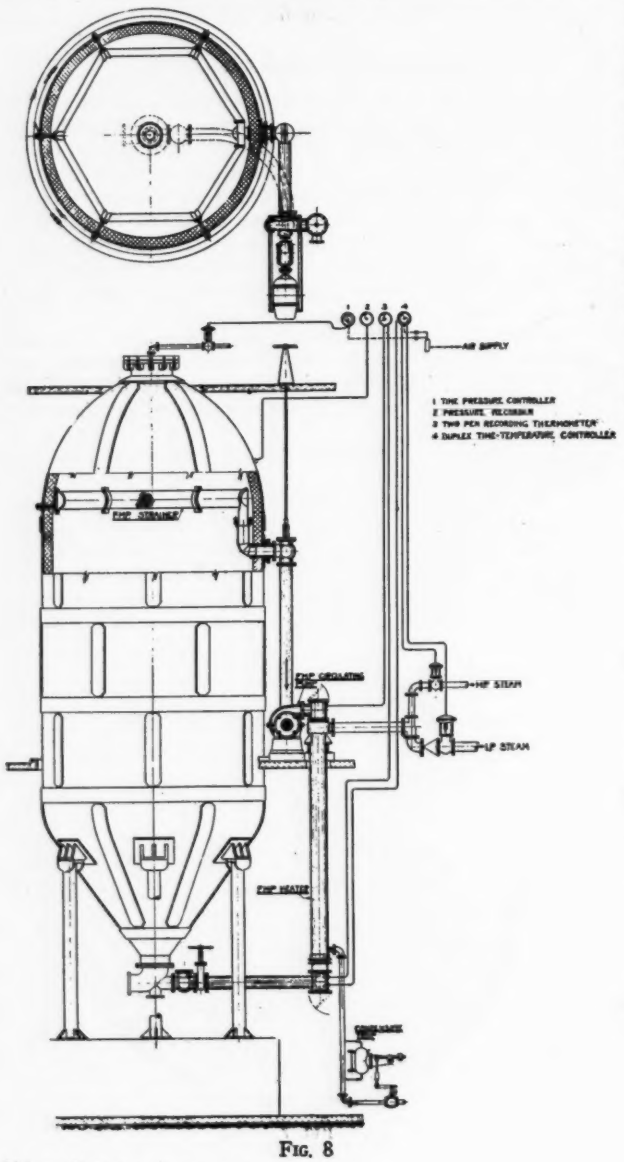

FIG. 8

To determine accurately all the savings effected by the introduction of this method of cooking has been difficult because most of the pulp is handled in a slush form to the beaters, and only half the digesters are operating with indirect cooking systems.

The third unit is now being installed, and with the completion of the fourth system it will be possible to greatly improve on the results obtained to date by adjusting the entire mill to the improved method of cooking. The purchase of additional cooking system was recommended on the strength of results obtained in the paper mill.

Formerly where it was necessary to purchase Mitcherlich sulphite to meet the competition on certain grades, we are now able to duplicate the same results with our own pulp. The fact that outside purchases have been practically eliminated and that we are able to operate our sulphite mill at normal capacity, has been responsible for a considerable saving in operating costs. With all digesters equipped, a more favorable heat balance may be worked out in the steam plant, as steam of only 50 pound pressure is required for the cooking.

By returning the condensate to the boilers, considerable heat is saved. Distilled water is of great benefit to the operation of the boilers and reduces the amount of raw water make-up to a minimum.

In addition to these benefits, the actual consumption of steam for cooking has been reduced materially by the more even distribution of heat as well as the lower temperatures required for cooking. The over-all efficiency of the entire mill has been improved materially by lowering the consumption of chemicals and increasing the yield as well as producing a pulp of much better quality.

In reviewing this development from the standpoint of the entire mill, and not merely as an improved method of cooking, we may draw the following conclusions:

DIGESTERS AND ACID PLANT

1. Increased yield from same quantity of wood.
2. Additional capacity with same cooking hours by introducing more chips.
3. Material saving in steam used for cooking.
4. Saving in sulphur and lime.
5. Improved operation of acid plant and recovery system by eliminating wet relief.
6. Considerable less cooling capacity required for relief.
7. Possibility of using full automatic control if desired.

BLEACH PLANT AND SCREEN ROOM

1. Lower bleach consumption if desired, with improved color and strength.
2. Less variables in bleachability.
3. Reduction in screenings.
4. Improved operation of screening system.

BOILER ROOM AND POWER PLANT

1. Less raw water treatment required by the return of condensate.
2. Saving of more than one-third of the coal as compared with the direct cook.
3. Improving boiler efficiency by eliminating excessive peak loads.
4. Reduction in power cost by the use of either bleeder or exhaust steam of low pressure.

WOOD YARD

1. Reduction in inventories by being able to cook greener wood. This factor will tend to reduce the loss due to decay to a minimum.
2. Money tied up in inventories may be released for other work.
3. Saving in taxes and insurance.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

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Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Analytical and Testing Methods

Accelerated Aging Tests of Fastness to Artificial Light. Papier 35. 861-865 (Aug. 1932). A description of the "Solarca" lamp, which is claimed to give results comparable to those of prolonged exposure to sunlight in practically all cases, together with a brief discussion of its merits. The lamp consists essentially of a bulb made of glass, transparent to ultra-violet light having a wavelength higher than 2700 Angstrom units, containing a large drop of mercury and two tungsten electrodes between which an arc is struck.—A. P.-C.

The Importance of the Fine Fibers (Flour) in the Formation of the Sheet. Wochbl. Papierfabr. 63, No. 38:708-10 (Sept. 17, 1932).—The "Research Flour Tester" constructed by Per Klemm is described. Curves are drawn of the various strength factors on sheets with varying percentages of fine fiber.—J. F. O.

Colorimetric Determination of pH of Solutions Containing Chlorine or Hypochlorites and the Stability of the Indicators. Henry F. Lewis and Stephen I. Kukolich. Paper Trade J. 95, No. 11:28-30 (Sept. 15, 1932).—Data are presented on nine indicators to show the minimum amounts of available chlorine that affects their accuracy for colorimetric pH determination, and it is shown that changes in the two-stage bleaching process may be followed with some success by means of the nitrophenol indicators.—A. P.-C.

The Screen Analysis of Ground Wood. K. Dittrich and W. Boos, Wochbl. Papierfabr. 63, No. 23A31-37; No. 26:498-501 (June 4, 25, 1932).—A review of the work already done on this subject is presented. Various ground wood samples are screened through screens of 81, 144, 256, and 400 meshes per square centimeter. Microscopic photographs show the appearance of each portion. Test sheets are made from each portion and tested for tear, specific volume, porosity, fold and bursting strength. The screen analysis gives a good idea of the great difference in properties of the fibers, strength values of 900 to 5450 emphasize this point. Even in mixtures with chemical pulps, these fiber properties make themselves shown. Ash test were made to determine the filler retention with the different grades of fiber, for which values of 16.6 to 62.8 were obtained. The use of raffineurs for refining the stock is shown to be almost valueless.—J. F. O.

Studies with the Copper Number. E. Richter. Tech. Chemie Papier Zellstoff Fabr., 28, No. 4:49-52 (Aug. 8, 1931).—The author discusses the effects of various factors encountered in the copper number determination, and also the effects of the physical condition of the pulp. The poorer the cellulose the higher the copper number. The effect on the copper number of pulps treated with alkali is described.—J. F. O.

Studies Concerning the Determination of the Copper Number. Erik Hagglund. Cellulose Chemie 11, No. 1:1-4 (Jan. 12, 1930).—The much used method for the determination of the copper number by Koehler Braidy is little suitable for the exact determination of the reduction power of pulp. Schwalbe method modified by Hagglund gives, in general, exact values, but it is too complicated and requires too much time to carry out. From the method for the determination of sugar by Bertrand, a new method for the copper number is worked out and it gives accurate values in less time.—J. F. O.

Determination of the Degree of Acidity and of the Copper Number in Paper with Special Reference to Swedish Writing Paper. Sigurd Kohler. Svensk Pappers-Tidn. 35:410-421, 444-450 (1932); C. A. 26:6129.—The degree of acidity was determined by comparing the hydrogen ion concentration with the titration of the acid. A change in the hydrogen ion value by 0.10 corresponds to a change in the acid number by 3.7 on an average. When paper is exposed to light the acid number increases rather quickly, while the hydrogen ion concentration seems to approach a limit. The acid number increases more slowly if the paper is kept in the dark. A simplified method is described for determining by titration the amount of reduced cuprous oxide in conjunction with the Schwalbe-Braidy method. Corresponding results were obtained in comparative determinations of the copper number by titration with potassium permanganate and by titration with iodine. The copper number changes slowly, especially when exposed to light, even diffused light.—C. J. W.

New Types of Equipment for Testing Paper. F. T. Carson and F. V. Worthington. Paper Trade J. 95, No. 16: 34-36 (Oct. 20, 1932).—A description of a specially designed float for making the dry-indicator sizing test, of an absorption tester for reproducibly delivering a very small drop of water on the surface of paper, and of an improved apparatus for extracting and cleansing processed papers.—A. P.-C.

A Study of Physical Properties of Binders Board. B. W. Scribner and L. W. Snyder. Paper Trade J. 95, No. 16: 29-33 (Oct. 20, 1932).—A study was made of the chief physical properties of a number of samples of commercial binders board. The flexural-strength test is the most suitable single test because of its duplication of service stresses and its superior accuracy.—A. P.-C.

Determination of Copper Number of Paper. J. D. Piper and C. H. Fellows. Ind. Eng. Chem. (Analyt. Edit.) 4: 377-379 (Oct. 15, 1932).—The U. S. Bureau of Standards method was found the most satisfactory for using the copper number test as a measure of deterioration of oil-impregnated paper insulation for high-voltage cables. A slightly modified technic is described in detail.—A. P.-C.

The Effect of Inorganic Acids on the Physical Properties of Waterleaf Rag Bond Papers. T. J. Jarrell,

J. M. Hankins and F. P. Veitch. Paper Trade J. 95, No. 14: 28-33 (Oct. 6, 1932).—Numerical experimental data are presented on the discoloration and loss of folding, tensile and bursting strength produced by treating unloaded, unsized, uncalendered rag bond paper with small quantities of aluminum, sulphuric acid and hydrochloric acid.—A. P.-C.

The Relation of Substance to the Strength of Machine-Made (High-Grade) Papers. T. H. Boyle. Paper Maker & Brit. Paper Trade J. 83: TS155-156 (April 1, 1932); World's Paper Trade Rev. 97: 1651-1654, 1688, 1690 (May 20, 1932).—Curves are given and discussed showing the relation between thickness and bursting, tensile, tearing and folding strengths in high-grade engine- and tub-sized writing paper.—A. P.-C.

New Color Method for Estimating Fiber in Paper. Bruno Schulze. World's Paper Trade Rev. 98: 218 (July 15, 1932).—A stain for analytical work, which does not fade like the Herzberg and is therefore suitable for permanent slides, can be made from Brilliant Congo Blue 2RW and Cotton Brown N dyes, of the I. G. Farbenindustrie. Equal parts of solutions of each of these dyes (1 g. in 70 cc. of water) and of a 6% solution of crystallized sodium sulphate are mixed just prior to use. The sample is boiled 30 sec. in this mixture, drained, washed once and slides are made. Mechanical pulp is stained chestnut-brown, chemical pulp bright blue with a slight tendency to violet.—A. P.-C.

Determination of Water Resistance of Paper. Anon. Paper Trade J. 95, No. 18: 36 (Nov. 3, 1932).—A description of the tentative standard T. A. P. P. I. method.—A. P.-C.

Determining the Time of Ink Absorption of Blotting Paper. Anon. Paper Trade J. 95, No. 18:39-40 (Nov. 3, 1932).—A description of the tentative standard T. A. P. P. I. method.—A. P.-C.

Determination of Rate of Absorption of Water by Bibulous Papers. Anon. Paper Trade J. 95, No. 18: 40 (Nov. 3, 1932).—A description of the tentative standard T. A. P. P. I. method.—A. P.-C.

Fiber Length Effect on Pulp and Sheet Properties. Roger B. Brown. Paper Trade J. 95, No. 13: 27-29 (Sept. 29, 1932).—Fiber length has a negligible effect on drainage rate and has practically no effect on porosity, shrinkage of the sheet on drying, spring-back and color. Uniformity of sheet formation is largely dependent on fiber length. Reducing the fiber length decreases the bursting strength.—A. P.-C.

Tearing Resistance of Paper. Leslie G. Cottrall. Paper Maker & Brit. Paper Trade J. 83: TS127-132 (March 1, 1932).—When tensile and bursting tests are carried out ballistically, the results are higher than when carried out statically. The Elmendorf tearing tester (and derived instruments such as the Marx-Elmendorf) are essentially ballistic instruments, and there are at present no *static tearing testers;* such an instrument has been devised and is described. From a discussion of the practical value of the tearing test, it is concluded that, except in the case of tissues used for machine-wrapping of confectionery, the tearing tester can be of use in controlling the paper making operation, but is practically valueless for evaluation of the performance of paper in use.—A. P.-C.

The Volumetric Composition of Paper. V. Composition of the Air Fraction; The Effect of Solid Fraction and Thickness on the Porosity and Air Transmissibility of Simple Papers. C. O. Seborg, R. H. Doughty and P. K. Baird. Paper Trade J. 95, No. 13; 31-33 (Sept. 29, 1932).—Over a definite range of solid fraction, the air transmissibility of paper is dependent on solid fraction alone and shows no significant variation with change in thickness, which corresponds to change in ream weight, at constant solid fraction.—A. P.-C.

The Relation of Sheet Properties and Fiber Properties in Paper. IV. The Use of Structural Concepts in Pulp Evaluation and Paper Design. R. H. Doughty. Paper Trade J. 95, No. 10: 31-38 (Sept. 8, 1932).—An explanation of the engineering concepts of sheet properties and review of the work done thereon, together with an illustration of the use of these results to permit more intelligent interpretation and application of pulp tests and to obtain accurate design and manufacture of papers.—A. P.-C.

Bursting Strength Tester. Samuel N. Senna assignor to B. F. Perkins and Son, Inc., U. S. pat. 1,878,446 (Sept. 20, 1932).—In a Mullen tester the piston through which pressure is exerted in the fluid chamber carries a rod which passes through a T-fitting screwed into the fluid chamber opposite the piston. The outer end of the rod carries a pointer which, during operation of the instrument, is displaced over a graduated scale. The scale reading attained when the test sheet bursts gives a measure of the elongation of the paper.—A. P.-C.

Concerning the Zero Tearing Length of Pulps and Papers. E. Grund and H. Weidenmuller. Papierfabr. 30, No. 24: 397-404, (June 12, 1932).—The tearing length of sheets made from certain pulps and of various commercial papers was determined by the use of the "Gunther Zero Clamp" on strips of zero length; from which the following deductions were made and proved. The zero tearing length values of pulps hardly change between the beating degrees of 30 to 80° Schopper, but from 90 on it begins to decrease. The zero tearing length of pulps is independent of the basis weight of the test sheet. By shortening the length of the strips of paper tested the tearing length increases. By means of these tests, the actual strength of the fiber and the strength derived from the felting properties of the fibers can be separately determined.—J. F. O.

Special Papers

Reinforced Roofing. Harry C. Macan assignor to Anaconda Sales Co. U. S. pat. 1,871,067 (Aug. 9, 1932).—The back of a web of asphalt-impregnated roofing felt is reinforced by means of a fabric which is somewhat narrower than the web and does not extend to its edges. The side exposed to the weather is protected by a suitable "amoring" material, which consists of a granular surfacing or of thin sheet metal (preferably copper) which does not extend to the edges of the roofing strip.—A.P.-C.

Apparatus for Surfacing Roofing. Elbert S. Donahue assignor to The Patent and Licensing Corp. U. S. pat. 1,872,622 (Aug. 16, 1932).—The invention provides a device for distributing colored granular material on the surface of an asphalt-coated web of roofing which permits of easily and quickly changing arrangement of colors without stopping the machine.—A. P.-C.

Foil Paper. R. H. N. Hoffman. Belg. pat. 386,083 (Feb. 29, 1932).—A silver- or gold-coated paper, either plain or embossed, is united by means of a bituminous or tar binder to a sheet of kraft paper. The product is suitable for wrapping tobacco.—A. P.-C.

Roofing Material. Harry C. Macan assignor to Anaconda Sales Co. U. S. pat. 1,871,068 (Aug. 9, 1932).—A material for use as a valley, flashing, and the like, comprises a web of weather-resistant metal of substantial thickness, and a relatively narrow strip of fabric affixed to one face of the metal web and extending substantially from one side edge so as to expose the remaining surface of the web.—A. P.-C.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Monroe, La.—The Trinity Bag and Paper Company, 23 West 43rd street, New York, N. Y., will make installation of 16 machines in new plant at Monroe, for initial operations, with provision for additional machinery at a later date. Company is pushing construction of new building, recently referred to in these columns, and is planning early occupancy. It will be one-story, 90 x 200 feet, located on site near local mill of Brown Paper Mill Company, which will be source of supply for new bag and container plant. In addition to main plant, company will build an office unit, 20 x 30 feet. Certain machinery will be removed from plant of company at Brooklyn, N. Y., to the new location. Benjamin Mintz, an official of the Trinity company, is in charge at plant site.

Elkhart, Ind.—The Elkhart Paper Box Company, recently formed with capital of 1000 shares of stock, no par value, is planning early operation of local plant for manufacture of paper bags and containers. The new company is headed by Fred R. Barger and Frank Eickelberg, both of Elkhart.

Steubenville, Ohio—The Liberty Paper Board Company has resumed operations at local mill, formerly the plant of the Hartje Paper Manufacturing Company, following shut-down for about seven months. About 40 men have been recalled in different departments and it is expected to increase this working quota in the near future. W. G. Shortess is president and general manager.

Griffith, Ind.—The Mapes Consolidated Manufacturing Company, manufacturer of paper plates, trays, cups, etc., a Delaware corporation, has arranged for increase in capitalization from 120,000 to 150,000 shares of stock, no par value, for general expansion. Main offices are at 222 West Adams street, Chicago, Ill.; it is affiliated with the Moulded Pulp Corporation, same address.

New York, N. Y.—The White Paper Box Company, 89 Leonard street, manufacturer of paper boxes and containers, has leased a floor in the building at 71 Franklin street, and will occupy for plant. It is understood that company will remove present establishment to new location.

Boston, Mass.—The Discoll Paper Company, West First and A streets, South Boston, is considering rebuilding of one-story paper storage and distributing building, used primarily for waste paper stock, destroyed by fire, March 1. An official estimate of loss has not been announced.

St. Louis, Mo.—The Rawlings Bag & Carton Company, recently organized by Arthur D. Rawlings, University City, Mo., and associates, is said to be planning early operation of local plant for the manufacture of paper boxes and cartons, paper bags, etc. Richard L. Rawling, Clayton, Mo., will be an official of new company.

Peoria, Ill.—The Humitube Manufacturing Company, operating a local converting plant for the manufacture of cellophane bags and containers, has arranged for an increase in capitalization from $25,000 to $100,000, for general expansion.

Pittston, Pa.—Ralph C. Mathewson, Pittston, Pa., is at the head of a project to establish and operate a local paper converting plant for the manufacture of envelopes. It is proposed to secure prices on necessary equipment at once.

Marshallton, Del.—The Haveg Corporation, Newark, Del., recently organized as an interest of the Continental Diamond Fibre Company, Newark, has begun production at its plant at Marshallton, comprising property formerly used by the parent organization, for the manufacture of a new molded product for use in the chemical and affiliated industries. A new addition to the plant has been completed, 50 x 200 feet, and additional equipment installed.

St. Louis, Mo.—The Shultz Folding Box Company, Eleventh and Pestalozzi streets, manufacturer of folding paper boxes, cartons, etc., is said to have plans maturing for rebuilding of portion of plant destroyed by fire a few weeks ago. The work is reported to cost close to $50,000, with equipment.

Long Island City, N. Y.—Following recent purchase of one-story factory on Review avenue, near 29th street, Long Island City, the International Mailing Tube & Wrapper Company, Flatbush avenue extension, Brooklyn, has transferred headquarters to that place, and it is understood that operations will be concentrated at this plant in the future.

Fort William, Ont.—The Great Lakes Paper Company, Ltd., has completed plans and awarded general contract to Barnet & MacQueen, Montreal, Que., for a new one-story addition to mill, to be used for storage and distributing service. Work will be placed under way at once. The unit will cost close to $60,000, with equipment.

St. Helens, England—The British Cellophane Company, London, England, has taken over the former Nuera Silk Mill at St. Helens, Lancashire, and will occupy for new plant. Structure will be remodeled and improved and new machinery installed for the manufacture of cellophane. It is proposed to have the program completed in about sixty days, with facilities for the employment of about 400 persons. It is expected to expand the works at a later date, with working force of close to 1000 operatives.

Polson, Mont.—F. C. Harrington and L. E. Van Winkle, Spokane, Wash., are at the head of a project to construct and operate a new pulp and paper mill on the Flathead River, Polson. Surveys and estimates of cost are under way. The initial mill will be equipped for a capacity of about 100 tons of newsprint and craft paper per day, and will include power house, pumping plant and other mechanical units. It is proposed to organize a new

company to carry out the project and to arrange financing in the near future.

Emeryville, Cal.—The Paraffine Companies, Inc., 475 Brannan street, San Francisco, Cal., manufacturer of building papers, fiberized and composition stock, etc., has active work in progress on new addition to mill, previously referred to in these columns, and it is proposed to have the unit ready for service in March. It will be one-story, reported to cost close to $70,000, with equipment. General construct for superstructure was recently let to Lindgren-Swinerton, Inc., 1733 Webster street, Oakland, Cal. R. S. Shainwald is president.

Bogalusa, La.—The New Orleans Corrugated Box Company, Inc., Dorgenois street, New Orleans, La., is running on a capacity schedule, one shift basis, at its solid fiber box manufacturing plant at Bogalusa. The company has recently secured a volume of new business, including an order for 600,000 box units for the Market Packing Company, Seattle, Wash., said to be the largest single order ever placed for solid fiber boxes. The containers will be used for salmon packing. It is estimated that over six weeks will be required to complete the order, which will necessitate the use of about 40 box cars for transportation to New Orleans, from which point the containers will be shipped by water to destination.

New York, N. Y.—The Criterion Paper Box Corporation has been organized by Benjamin Weinberg, 1115 Jerome avenue, Bronx, and associates, and plans early operation of plant for the manufacture of paper boxes and containers. Harry Rice, 2320 Pitkin avenue, Brooklyn, N. Y., is one of the incorporators of the new company.

Philadelphia, Pa.—The Pennsylvania Paper Storage Company has awarded general contract to G. Albert Hallstrone, 964 Wagner street, for alterations and improvements in building at 240 North Delaware avenue, to be used for storage and distributing service.

Kansas City, Kan.—The Sealright Company, Inc., Kansas City, affiliated with the Oswego Falls Corporation, Fulton, N. Y., has work near completion on new addition to plant, on which work recently was placed under way, and expects to have the structure ready for service at an early date. It will be one-story, 70 by 153 feet, and will be equipped for the manufacture of paper cans, a new branch of output for company here. The structure will be owned by the Union Pacific Railroad Company, Omaha, Neb., and will be occupied under lease. It is reported to cost close to $40,000 with equipment.

New York, N. Y.—The Standard Paper Box Corporation has been organized with capital of $10,000, to manufacture paper boxes and containers. A local plant will be operated and it is understood that company will succeed to the Standard Paper Box Company, 418 West Twenty-fifth street. Incorporators of the new company include Louis H. Stallman, 915 West End avenue, New York, and Solomon Goldman, 60 East 102nd street, New York.

New Brunswick, N. J.—J. Lapelosa, 171 Remsen Avenue, paper manufacturers' supplies, etc., is planning early call for bids on general contract for a new plant unit on Georges road, to be two-story and basement, 60 by 130 feet, to be equipped in part for paper converting service and for storage and distributing purpose. It is reported to cost over $35,000, with equipment. H. G. Bach, 63 Schureman street, New Brunswick, is architect, in charge.

New York, N. Y.—The Hercules Fibre Company, 30 East 42nd street, a Delaware corporation, has arranged for an increase in capital from 1500 to 2000 shares of stock, no par value.

Westfield, N. J.—The General Cellulose Company, Inc., recently organized by Donald C. Taggart, 561 Coleman place, Westfield, and associates, is planning operation of plant for manufacture of cellulose wrapping materials. The new company is capitalized at $10,000, preferred stock, and 400 shares of stock, no par value, common stock.

Doncaster, England—British Bemberg, Ltd., manufacturer of cellulose rayon products, is expanding mill capacity, and is now running on a capacity schedule, with day and night working forces. It is expected to hold to this basis throughout 1933.

Tokyo, Japan—Okura Gumi, Ltd., Tokyo, operating a number of industrial interests, have formed a new subsidiary, to be known as the Tokai Fiber Company, Ltd. Plans are under way for the establishment of a new mill for the production of raw fiber and cellulose materials, for conversion into rayon products by affiliated interests. The new plant is reported to cost over $250,000, with equipment.

New Companies, Etc.

New York, N. Y.—The A. A. A. Folding Box Company, Inc., has been incorporated with a capital of $10,000, to manufacture paper boxes and containers, as well as paper napkins and kindred specialties. The principal incorporator is Benjamin Neugeboren, 1450 Broadway, New York.

Jersey City, N. J.—Print-A-Tube Company has been incorporated with a capital of 1000 shares of stock, no par value, to manufacture cellulose moisture-proof wrapping materials, etc. Joseph M. Schoenberg, 26 Journal Square, Jersey City, is attorney and company representative.

Philadelphia, Pa.—The North Philadelphia Wall Paper Company has been incorporated by William C. Kray, North Philadelphia, and associates, to deal in wall paper and kindred subjects.

Brooklyn, N. Y.—The Evergreen Paper Mill Supply Company, Inc., has been incorporated with a capital of $20,000, to manufacture and deal in paper mill supplies. The incorporators are Frank Trezza, 6629 Clinton avenue, Maspeth, L. I., and James Dalto, 212 North Sixth Street, Brooklyn.

Philadelphia, Pa.—Henry W. Braude has been appointed referee in bankruptcy for George F. Nuss, 1849 East Venango street, manufacturer of paper boxes and containers. Company liabilities are stated at $43,440 and assets, $1073.

New York, N. Y.—American Paper Exports, Inc., 75 West street, has arranged for a change of capital from $1,500,000 to $770,700.

Syracuse, N. Y.—The Camilla Paper Products Corporation has been incorporated with a capital of 1000 shares of stock, no par value, to manufacture paper products of various kinds. Charles F. Sauers, 214 West Kennedy street, Syracuse, is the principal incorporator.

Kansas City, Mo.—The Lipit Envelope Company has been organized by C. V. Walters and Claude A. Carlat, 1012 West Fifty-fourth street, Kansas City, to manufacture envelopes and kindred paper products.

Brooklyn, N. Y.—The Wolf Brothers Wall Paper Company, Inc., has been incorporated with capital of $50,000, to manufacture and deal in wall paper and kindred products. The incorporators are George B. Wolf, Granada Hotel, Brooklyn; and Harold G. Israelson, 225 Broadway, New York, N. Y.

Philadelphia, Pa.—The Arrow Paper Company has filed notice of organization, to deal in paper products of various kinds. Herman Simon, 245 Race street, heads the company.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MARCH 4, 1933

CIGARETTE PAPER

American Tobacco Co., Paris, Havre, 300 cs.; Standard Products Corp., Paris, Havre, 77 cs.; Champagne Paper Corp., Paris, Havre, 61 cs.; P. J. Schweitzer, Pr. van Buren, Marseilles, 15 cs.

WALL PAPER

R. F. Downing & Co., Aquitania, Southampton, 2 cs.; Hudson Forward & Shipping Co., Aquitania, Southampton, 1 cs.; Reitman Pilcer Co., Stavangerfjord, Oslo, 2 cs.; ——, Hamburg, Hamburg, 3 cs.

WALL BOARD

Treetex Corp., Kelkheim, Horneborg, 8455 bdls.

NEWS PRINT

Jay Madden Corp., Scanyork, Kotka, 401 rolls; ——, Scanyork, Kotka, 84 rolls; Gilman Paper Co., Scanyork, Kotka, 331 rolls; Parsons & Whittemore, Inc., Karpfangar, Sundsvall, 37 rolls; Parsons & Whittemore, Inc., Scanmail, Stockholm, 128 rolls; Jay Madden Corp., Scanmail, Kotka, 733 rolls; Baldwin Paper Co., Scanmail, Kotka, 59 rolls; ——, Stavangerfjord, Oslo, 524 rolls; Jay Madden Corp., Hamburg, Hamburg, 133 rolls; Perkings Goodwin & Co., Frankfurt, Bremen, 64 rolls; Jay Madden Corp., Frankfurt, Bremen, 123 rolls.

PRINTING PAPER

J. E. Bernard & Co., Black Gull, Antwerp, 1 ble.; P. Puttmann, Black Gull, Antwerp, 36 cs.; ——, Scanyork, Kotka, 63 rolls, 48 bls.; E. Dietzgen & Co., Black Heron, Rotterdam, 7cs.; Martin & Bechtold, Hamburg, Hamburg, 7 cs.; C. Steiner, Frankfurt, Bremen, 22 cs.

WRAPPING PAPER

Jacobson Bros., Black Gull, Antwerp, 1 cs.; Yardley & Co., American Banker, London, 4 cs.

FILTER MASS

Mayer Bros., Hamburg, Hamburg, 75 bls.

FILTER PAPER

H. Reeve Angel & Co., Inc., Aquitania, Southampton, 63 bls., 12 cs.; A. Giese & Son, Aquitania, Southampton, 2 bls.; H. Reeve Angel & Co., Inc., American Banker, London, 2 cs.

SURFACE COATED PAPER

Gevaert Co of America, Black Gull, Antwerp, 12 cs.; Phoenix Shipping Co., Hamburg, Hamburg, 1 cs.

METAL COATED PAPER

K. Pauli Co., Hamburg, Hamburg, 22 cs.

BASIC PAPER

F. C. Strype, Frankfurt, Bremen, 6 cs.

COATED PAPER

C. Happel, Hamburg, Hamburg, 11 cs.

PHOTO PAPER

J. J. Gavin, Aquitania, Southampton, 4 cs.

TISSUE PAPER

Siebert Paper Co., Scythia, Liverpool, 5 cs.; W. J. Byrnes, Aquitania, Southampton, 3 cs.

DECALCOMANIA PAPER

Sellers Transportation Co., Hamburg, Hamburg, 7 cs.

COPYING PAPER

Roneo Co., American Banker, London, 6 rolls.

ENVELOPES

Globe Shipping Co., Hamburg, Hamburg, 3cs.; Beckhard Simfred Co., Hamburg, Hamburg, 3 cs.

STENCIL PAPER

Massce & Co., Aquitania, Southampton, 1 cs.

PASTE BOARD

Dunn & Sons Co., Hamburg, Hamburg, 29 cs.; De Grauw Aymar & Co., Excelsior, Genoa, 25 crates.

MISCELLANEOUS PAPER

Van Oppen & Co., Paris; Havre, 9 cs.; W. Bersch & Co., Black Heron, Rotterdam, 1 roll; Nat'l Paper & Type Co., Stavangerfjord, Oslo, 26 rolls; Keuffel & Esser Co., Hamburg, Hamburg, 9 cs.; J. H. Faunce & Co., Hamburg, Hamburg, 2 cs.; Wedeman Godknecht & Lally, Hamburg, Hamburg, 20 cs.

RAGS, BAGGING, ETC.

E. J. Keller Co. Inc., Black Gull, ——, 90 bls. bagging; Banco Coml. Italiane Trust Co., England Maru, Hamburg, 59 bls. rags; G. J. Schuster, Oriente, Havana, 9 bls. rags; Dorfman Bag Co., Frankfurt, Bremen, 19 bls. bagging; G. M. Graves Co., American Banker, London, 45 bls. rags.

GLUE STOCK, ETC.

H. Bierschenk, Black Heron, Rotterdam, 200 bags hide glue, 10200 ks.; ——, Saturnia, Trieste, 270 bags hide glue; ——, Hamburg, Hamburg, 200 bags hide glue; ——, Frankfurt, Bremen, 124 bags hide glue.

CASEIN

D. C. Andrews & Co., Hamburg, Hamburg, 60 bags.

OLD ROPE

W. Steck & Co., Black Gull, Antwerp, 72 coils; Banco Coml. Italiane Trust Co., American Banker, London, 52 bls.

WOOD PULP BOARDS

Lagerloef Trading Co., Scanyork, Kotka, 66 rolls, 22 tons; Lagerloef Trading Co., Scanyork, Kotka, 48 bls., 6 tons.

WOOD PULP

Price & Pierce, Ltd., Belos, Wallvik, 5250 bls. sulphite, 875 tons; Price & Pierce, Ltd., Belos, Wallvik, 1800 bls. sulphate, 300 tons; Price & Pierce, Ltd., Belos, Stugsund, 500 bls. mechanical, 100 tons; J. Andersen & Co., Belos, Hernosand, 3450 bls. sulphate, 575 tons; Perkins Goodwin & Co., Belos, Sundsvall, 2100 bls. sulphite, 350 tons; Stora Kopparberg Corp., Belos, Gefle, 75 bls. wood pulp, 15 tons; Perkins Goodwin & Co., Belos, Gefle, 500 bls. sulphate, 101 tons; Perkins Goodwin & Co., Belos, Gefle, 500

bls. Sulphite, 101 tons; Pagel Horton & Co., Inc., Belos, Gefle, 1723 bls. sulphite, 175 tons; Bulkley Dunton & Co., Belos, ——, 1750 bls. sulphite, 355 tons; Chase National Bank, Lagaholm, Stockholm, 600 bls. sulphite; Atterbury Bros. Inc., Lagaholm, Kotka, 175 bls. sulphate; Lagerloef Trading Co., Lagaholm, Kotka, 127 bls. mechanical; Lagerloef Trading Co., Lagaholm, Kotka, 6088 bls. sulphite; Lagerloef Trading Co., Lagaholm, Kotka, 565 bls. sulphate; ——, Scanyork, Kotka, 1420 bls. sulphite, 258 tons; Castle & Overton, Inc., Scanyork, Kotka, 4238 bls. sulphite, 848 tons; Atterbury Bros. Inc., Scanyork, Helsingfors, 50 bls. cellulose, 8 tons; Lagerloef Trading Co., Scanyork, Helsingfors, 370 bls. sulphate, 61 tons; Lagerloef Trading Co., Scanyork, Helsingfors, 2390 bls. sulphite, 404 tons; Castle & Overton, Inc., Black Heron, Rotterdam, 2540 bls. wood pulp, 497 tons; Guaranty Trust Co., Black Heron, Rotterdam, 1490 bls. wood pulp; Bulkley Dunton & Co., Karpfanger, ——, 5125 bls. wood pulp, 1028 tons; Johaneson Wales & Sparre, Inc., Karfanger, Sundsvall, 500 bls. sulphite, 101 tons Continental Bank & Trust Co., Karpfanger, Hernosand, 1200 bls. sulphite, 200 tons; Castle & Overton, Inc., Scanmail, Kotka, 834 bls. sulphite, 166 tons; Lagerloef Trading Co., Scanmail, Helsingfors, 381 bls. mechanical, 76 tons; E. M. Sergeant & Co., Stavangerfjord, Oslo, 1650 bls. chemical pulp; Perkins Goodwin & Co., Stavangerfjord, Drammen, 500 bls. sulphite; ——, Hamburg, Hamburg, 324 bls. wood pulp, 50 tons; Castle & Overton, Inc., Hamburg, Hamburg, 850 bls. wood pulp, 170 tons; ——, Frankfurt, Bremen, 150 bls. wood pulp; Bulkley Dunton & Co., Stuttgart, ——, 2500 bls. wood pulp.

PORTLAND IMPORTS

WEEK ENDING MARCH 4, 1933

Atterbury Bros. Inc., Lagaholm, Stockholm, 400 bls. sulphite; Chase National Bank, Lagaholm, Stockholm, 200 bls. sulphite; Atterbury Bros. Inc., Lagaholm, Kotka, 660 bls. sulphate; Lagerloef Trading Co., Lagaholm, Kotka, 8485 bls. sulphite; Lagerloef Trading Co., Lagaholm, Kotka, 2577 bls. sulphate; Lagerloef Trading Co., Lagaholm, Kotka, 2500 bls. mechanical pulp; Bulkley Dunton & Co., Karfanger, ——, 12625 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING MARCH 4, 1933

E. Butterworth & Co., Inc., Black Gull, Antwerp, 196 bags glue stock; Downing & Co., Black Gull, Antwerp, 6 cs. parchment paper; ——, Black Gull, Antwerp, 62 bls. bagging; F. J. Fawcett, Black Gull, Antwerp; 189 bls. flax waste; Bulkley Runton & Co., Karpfanger, ——, 2875 bls. wood pulp; G. F. Malcolm, Inc., Scythia, Liverpool, 21 cs. tissue paper; ——, Pr. van Buren, Genoa, 3 cs. paper.

NEWPORT NEWS IMPORTS

WEEK ENDING MARCH 4, 1933

——, Kelkheim, Iggesund, 1250 bls. chemical pulp, 250 tons; Gottesman & Co., Inc., Kelkheim, Iggesund, 2500 bls. sulphite, 500 tons; Price & Pierce, Ltd., Kelkheim, Gefle, 3400 bls. sulphite; Parsons & Whittemore, Inc., City of Norfolk, ——, 500 bls. sulphite.

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 4, 1933

Price & Pierce, Ltd., Belos, Stugsund, 500 bls. mechanicall pulp, 100 tons; Perkins Goodwin & Co., Belos, Sundsball, 1200 bls. sulphite, 200 tons; Stora Kopparberg Corp., Belos, Gefle, 75 bls. wood pulp, 15 tons; ——, Karpfanger, Sandarne, 500 bls. sulphate, 100 tons; Bulkley Dunton & Co., Karpfanger, ——, 875 bls. sulphite, 177 tons; Parsons & Whittemore, Inc., Karpfanger, Sundsvall, 900 bls. mechanical pulp, 152 tons; Castle & Overton, Inc., Scanmail, Kotka, 1056 bls. wood pulp, 211 tons; ——, Scanmail, Kotka, 2803 bls. wood pulp, 524 tons; Lagerloef Trading Co., Scanmail, Kotka, 875 bls. mechanical pulp, 175 tons; ——, Scanmail, Kotka, 119 rolls news print; Lagerloef Trading Co., Scanmail, Helsingfors, 400 bls. mechanical pulp, 80 tons; Parsons & Whittemore, Inc., Scanmail, Stockholm, 112 rolls news print.

BALTIMORE IMPORTS

WEEK ENDING MARCH 4, 1933

Price & Pierce, Ltd., Belos, Wallvik, 690 bls. sulphate, 115 tons; Price & Pierce, Ltd., Belos, Stugsund, 1200 bls. mechanical, 250 tons; Perkins Goodwin & Co., Belos, Sundsvall, 1200 bls. sulphate, 200 tons; Stora Kopparberg Corp., Belos, Gefle, 150 bls. wood pulp, 30 tons; ——, Karpfanger, Stugsund, 2125 bls. sulphate, 425 tons; Mead Sales Co., Karpfanger, Sundsvall, 4608 bls. sulphite, 780 tons; Johaneson Wales & Sparre, Inc., Karpfanger, Sundsvall, 1500 bls. sulphite, 304 tons; Bulkley Dunton & Co., Karpfanger, ——, 1375 bls sulphite, 279 tons; ——, Kelkheim, Kopmanholmen, 4896 bls. chemical, 812 tons; ——, Kelkheim, Iggesund, 1250 bls. chemical, 250 tons; Gottesman & Co., Inc., Kelkheim, Iggesund, 1500 bls. sulphite, 300 tons; ——, Kelkheim, Iggesund, 2950 bls. chemical, 590 tons; ——, Kelkheim, Iggesund, 250 bls. sulphate, 50 tons; Gottesman & Co., Inc., Kelkheim, Gefle, 1350 bls. sulphite; Parsons & Whittemore, Inc., Uruguayo, ——, 3250 bls. wood pulp.

WILMINGTON IMPORTS

WEEK ENDING MARCH 4, 1933

Castle & Overton, Inc., Scanmail, Kotka, 4242 bls. sulphite, 848 tons.

HOUSTON IMPORTS

WEEK ENDING MARCH 4, 1933

Jay Madden Corp., Frankfurt, Bremen, 110 rolls newsprint; ——, Frankfurt, Hamburg, 375 bls. bagging.

GALVESTON IMPORTS

WEEK ENDING MARCH 4, 1933

National City Bank, Frankfurt, Bremen, 317 bls. bagging.

Miami Superintendents Meet

DAYTON, Ohio, March 7, 1933—The Miami Valley Division of the American Pulp and Paper Mill Superintendents' Association conducted its last meeting Saturday afternoon and night at Hamilton.

The program was sponsored by the Black-Clawson Company, manufacturers of paper mill machinery and this firm escorted the local and visiting superintendents from Dayton, Franklin, Middletown, Piqua, Lockland and other mill centers, through its plant, which is one of the most modern of its kind in the country.

During the entire period of the depression, this firm has managed to operate, although necessarily not a complete force part of the time, and its present business is reported to be encouraging. One of the features of the visit was the inspection of a large paper making machine constructed for a big concern. This proved of decided interest to the visitors.

In keeping with the mill visit, the superintendents at their business session discussed cylinder machines, this subject having been taken up as the general topic of the Miami Valley meeting.

An appetizing feast was enjoyed by the superintendents and entertainment was afforded by the hosts and the committee in charge of the divisional meeting.

New York Market Review

Office of the PAPER TRADE JOURNAL
Wednesday, March 8, 1933.

Trading in the local paper market was only moderately active during the past week, due to some extent to the banking situation. Demand for the various grades of paper, however, was considered satisfactory considering prevailing business conditions. Quotations are firmer and the outlook for the future is brighter.

The news print paper market continues listless. Production in the United States and Canada is being maintained in sufficient volume to take care of current requirements. Advertising lineage shows no signs of expanding and future prospects are uncertain. The price situation is unsatisfactory.

Conditions in the paper board market are improving. The demand for material for jig-saw puzzles is expanding and is materially assisting the industry. The fine paper market is exhibiting a stronger undertone. Demand for coarse paper is fairly active. Kraft wrapping paper prices are practically unchanged.

Mechanical Pulp

Steadiness prevails in the ground wood pulp market. Although the demand for mechanical pulp is rather slow, operations at both American and foreign mills are curtailed and the industry is in a sound statistical position. Prices are generally holding to formerly quoted levels and reports of concessions are infrequent.

Chemical Pulp

The chemical pulp market is practically marking time, awaiting the end of the banking moratorium. A little routine business is being transacted and there are a few inquiries for spot orders around. More lively trading is anticipated, however, when the business situation clears. No price changes have been reported.

Old Rope and Bagging

Some improvement was noticed in the old rope market. Demand for both domestic and imported old manila rope is slightly more persistent. Small mixed rope is moving in better volume. Prices are steady. The bagging market is quiet. Gunny and scrap bagging are in light request. Roofing bagging is dull.

Rags

Paper mill demand for domestic rags is rather restricted at present. Little interest is being displayed in the various grades of cotton rags. Roofing grades, however, are moderately active. Prices are nominal. The position of the imported rag market is involved and will be affected by the future course of foreign exchange.

Waste Paper

The paper stock market is more buoyant. Board mill request for the lower grades is excellent especially for strictly folded news and No. 1 mixed paper. Prices are steady to firm. The better grades of waste paper are holding up well. Soft and hard white shavings are moving freely. Book stock is going forward in moderate volume.

Twine

Most of the business transacted in the local twine market during the past week was along routine lines. With the approach of Eastertide the demand for the various grades is expected to gradually expand. Inquiries for future account are fairly numerous. Prices are steady.

J. M. Conway Discusses Safety Progress

APPLETON, Wis., March 6, 1933—J. M. Conway, president and general manager of the Hoberg Paper and Fibre Company, gave the address at the closing session last week of a series of safety meetings conducted for foremen and paper mill workers at the vocational school at Green Bay, Wis.

"Safety has been taken out of the hands of the humanitarian, who often used foolish means to gain an end, and is now in the hands of business executives and employees," said Mr. Conway. "It is there because progress, the motive of practically every successful movement, has called for it.

"We do not delude ourselves into believing that accident will wholly disappear from industry, but we believe it can be reduced to a point considerably lower than it is today.

"Private initiative brought the whole movement about. The employer found that he could produce a better product at less cost if accidents were eliminated. The employee found he could continue to obtain a better wage and more opportunity for advancement if he avoided accident. Our progress has awakened a desire to settle other of our perplexing employer-employee problems with like success. We greet it as a new door that has opened for us in our employment and operating relations."

Mr. Conway declared also that while safety progress has been remarkable, there is yet a wide field, especially outside of industrial plants, and particularly with reference to traffic safety.

Cotton Rag Conferences Planned

Through the efforts of Secretary Haskins, of the National Association of Waste Material Dealers, Inc., and Emmett H. Naylor, secretary of the Writing Paper Manufacturers' Association, there is every reason to believe that the coming year will witness a number of conferences between consumers of cotton rags and those who produce and grade them.

It is hoped that the first few conferences will be followed by the formation of a permanent conference group made up of purchasing agents and executives of the mills on the one hand and members of the Cotton Rag Division of the National Association of Waste Material Dealers, Inc., on the other.

Secretary Haskins has suggested that one of the coming conferences be at the plant of one of the largest manufacturers of writing paper in order that the suppliers of rags may have a first-hand opportunity of witnessing the actual handling of rags within a paper mill.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL.
Wednesday, March 8, 1933.

BLANC FIXE.—The blanc fixe market is moderately active. Prices are generally holding to schedule. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk; while the powder is selling at from 3½ cents to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Demand for bleaching powder is somewhat restricted. Shipments against contract are moving in moderate volume. Prices continue steady and unchanged. Bleaching powder is quoted at from $1.75 to $2.00 per 100 pounds, in drums, at works.

CASEIN.—The casein market is practically marking time. Domestic standard ground is quoted at 7 cents and finely ground at 8 cents per pound. Argentine standard ground is selling at 9 cents and finely ground at 9½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. The contract movement is normal. Prices are unchanged. Solid caustic soda is quoted at from $2.55 to $2.60; while the flake and ground are selling at $2.95 to $3.00 per 100 pounds, in large drums, at works.

CHINA CLAY.—The chine clay market is fairly active. Contract shipments are moving in seasonal volume. Imported china clay is quoted at from $10 to $15 per ton, ship side; while domestic paper making clay is selling at from $5 to $12 per ton, at mine.

CHLORINE.—Conditions in the chlorine market are fairly satisfactory. Shipments against contract are moving with regularity. Prices are holding to schedule. Chlorine is quoted at $1.75 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is fairly steady. The grades of gum rosin used in the paper mills are quoted at from $3.55 to $4.00 per 280 pounds, in barrels, at works; while wood rosin is selling at $2.60 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Business in the salt cake market is quiet. Prices are slightly easier. Salt cake is now quoted at from $12.50 to $13.00; chrome salt cake at from $11.50 to $12.50 per ton, in bulk, at works. Foreign salt cake is selling at from $12.50 to $13.00 per ton, on dock.

SODA ASH.—The soda ash market is exhibiting a strong undertone. Demand is fairly persistent. Prices are holding to schedule. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.30; and in barrels, $1.43.

STARCH.—No radical changes have transpired in the starch market. Paper mill demand is seasonal. Prices are steady and unaltered. Special paper making starch is quoted at $2.19 per 100 pounds, in bags; and at $2.46 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Trading in the sulphate of alumina market is fairly active. Prices remain unchanged. Commercial grades are quoted at from $1.25 to $1.46; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Most of the business transacted in the talc market during the past week was along routine lines. Domestic talc is still quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $18 to $22 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@38.00
Bonds	4.50	@53.25
Index	6.00	@12.00
Writings—		
Extra Superfine	6.50	@15.00
Superfine	6.25	@14.75
Tub sized	4.50	@ 7.00
Engine sized	4.00	@ 5.00
Book, Cased—		
S. & S. C.	4.25	@ 5.00
M. F.	3.75	@ 4.25
Coated and Enamel	5.00	@ 9.00
Lithograph	5.00	@ 9.00
Tissues—Per Ream—		
White No. 1	.50	@ .70
White No. 2	.45	@ .60
Anti-Tarnish M. G. only	.65	@ .70
Colored	.70	@ .90
Kraft	.65	@ .70
Manila	.55	@ .60
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.00	@ 5.25
No. 2 Wood	3.50	@ 4.00
Butchers	3.37½	@ —
Fibre Papers—		
No. 1 Fibre	4.25	@ 5.50
No. 2 Fibre	4.00	@ 4.75
Common Bogus	1.50	@ 3.00
Screenings	2.00	@ 3.00
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs., No. 1	.09¾	@ —
No. 2	.11¼	@ —
Bleached, basis 20 lbs.	.11¾	@ —

(Delivered New York)

News, per ton—		
Roll, contract	45.00	@ —
Rolls, spot	45.00	@ —
Sheets	50.00	@ —
Side Runs	30.00	@35.00
Kraft—		
No. 1 Domestic	4.50	@ 4.75
No. 2 Domestic	2.75	@ 3.00
Southern	2.50	@ 2.75
Imported	2.75	@ 3.50
Boards—per ton—		
News	30.00	@32.50
Straw	29.50	@31.50
Chip	27.50	@30.00
Binders' Boards	62.00	@70.00
Kraft Liner	40.00	@45.00
Standard 85 Test Jute Liner	27.75	@30.00
Sgl. Mla. Ll. Chip	37.50	@40.00

(F. o. b. Mill)

Wood Pulp Boards	70.00	@80.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—		
Moist	18.00	@20.00
Dry	19.00	@21.00

(F. o. b. Mill)

No. 1 Domestic and Canadian	14.00	@22.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	1.80	@ 2.25
Easy Bleaching	1.60	@ 1.75
No. 1 strong unbleached	1.35	@ 1.60
Mitscherlich unbleached	1.60	@ 1.75
No. 2 strong unbleached	1.25	@ 1.35
No. 1 Kraft	1.25	@ 1.40
No. 2 Kraft	1.10	@ 1.15
Sulphate—		
Bleached	1.85	@ 2.15

(F. o. b. Pulp Mill)

Sulphite (Domestic and Canadian)—		
Bleached	1.75	@ 3.75
Easy Bleaching	1.75	@ 1.90
News	1.40	@ 1.65
Mitscherlich unbleached	2.00	@ 2.25
Kraft (Domestic)	1.25	@ 2.75

(Delivered Paper Mills)

Soda Bleached	2.00	@ —

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	3.80	@ 4.00
New White, No. 2	3.00	@ 3.25
Silesias No. 1	3.25	@ 4.00
New Unbleached	5.25	@ 5.75
New Soft Blacks	2.75	@ 3.00
Blue Overall	3.00	@ 3.50
Fancy	1.25	@ 1.50
Washables	1.00	@ 1.25
Mixed Khaki Cuttings	2.50	@ 3.00
Pink Corset Cuttings	2.75	@ 3.25
O. D. Khaki Cuttings	3.00	@ 3.25
Men's Corduroy	1.00	@ 1.25
New Mixed Blacks	2.25	@ 2.50

Old Rags

White, No. 1—		
Repacked	3.00	@ 3.50
Miscellaneous	2.00	@ 2.25
White, No. 2—		
Repacked	1.75	@ 2.00
Miscellaneous	1.50	@ 1.75
Thirds and Blues—		
Repacked	1.50	@ 1.75
Miscellaneous	1.00	@ 1.25
Black Stockings	2.00	@ 2.25
Roofing Rags—		
No. 1	.53	@ .58
No. 2	.48	@ .53
No. 3	.43	@ .48
No. 4	.38	@ .43
No. 5A	.33	@ .38

Foreign Rags

New Rags

New Dark Cuttings	1.30	@ 1.40
New Mixed Cuttings	1.50	@ 1.60
New Light Silesias	3.00	@ 3.25
Light Flannelettes	2.50	@ 2.75
Unbleached Cuttings	4.50	@ 5.00
New White Cuttings	4.00	@ 4.25
New Light Oxfords	3.00	@ 3.25
New Light Prints	1.85	@ 2.25

Old Rags

No. 1 White Linens	5.25	@ 5.50
No. 2 White Linens	4.50	@ 4.75
No. 3 White Linens	3.25	@ 3.75
No. 4 White Linens	1.75	@ 2.25
No. 1 White Cotton	3.50	@ 3.75
No. 2 White Cotton	2.75	@ 3.25
No. 3 White Cotton	2.25	@ 2.50
No. 4 White Cotton	1.40	@ 1.50
Extra Light Prints	1.80	@ 2.00
Ord. Light Prints	1.60	@ 1.75
Med. Light Prints	1.40	@ 1.55
Dutch Blue Cottons	1.35	@ 1.40
French Blue Linens	1.80	@ 1.90
German Blue Linens	1.70	@ 1.80
German Blue Cottons	1.20	@ 1.25
Checks and Blues	1.25	@ 1.30
Lindsay Garments	.75	@ .80
Dark Cottons	.70	@ .75
Old Shopperies	.55	@ .60
New Shopperies	.60	@ .65
French Blues	1.25	@ 1.30

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	.90	@ 1.00
Domestic	1.00	@ 1.10
Wool Tares, light	.70	@ .80
Wool Tares, heavy	.70	@ .80
Bright Bagging	.70	@ .75
Small Mixed Rope	.50	@ .60
Manila Rope—		
Foreign	1.35	@ 1.40
Domestic	1.40	@ 1.50
New Burlap Cut	1.00	@ 1.50
Hessian Jute Threads—		
Foreign	2.60	@ 2.75
Domestic	2.80	@ 3.00

Old Waste Papers

(F. o. b. New York)

Shavings—		
White Envelope Cuttings	1.70	@ 1.80
Ordinary Hard White No. 1	1.55	@ 1.65
Hard White No. 2	1.30	@ 1.40
Soft White No. 1	1.35	@ 1.45
Flat Stock—		
Stitchless	.55	@ .65
Overissue Mag	.55	@ .65
Solid Flat Book	.50	@ .55
Crumpled No. 1	.40	@ .45
Solid Book Ledger	1.50	@ 1.75
Ledger Stock	.45	@ .55
New B. B. Chips	.20	@ .25
Manilas—		
New Env. Cut	1.25	@ 1.35
New Cuttings	1.00	@ 1.05
Extra No. 1 old	.80	@ .90
Print	.35	@ .40
Bogus Wrapper	.30	@ .35
Container	.25	@ .30
Old Kraft Machine— Compressed bales	.60	@ .70
News—		
No. 1 White News	1.00	@ 1.05
Strictly Overissue	.45	@ .50
Strictly Folded	.30	@ .35
No. 1 Mixed Paper	.15	@ .20

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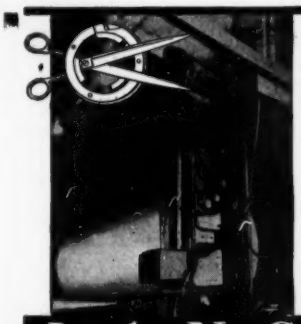

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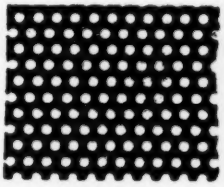

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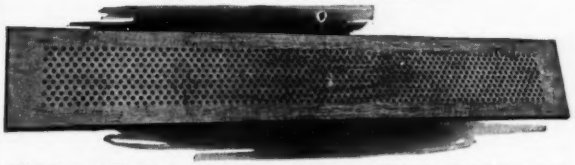

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Twines
(F. o. b. Mill)

Cotton—			
B. C., 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finished Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.11¾	@	.12¼
Tube Rope—			
4-ply and larger	.10¼	@	.10¾
Fine Tube Rope—			
4-ply	.12¼	@	.12¾
3-ply	.13¼	@	.13¾
2-ply	.14¼	@	.14¾
Paper Makers Twine			
Balls	.09¼	@	.11¼
Box Twine, 2-3 ply	.11¼	@	.12¼
Jute Rope	.09	@	.10
White Hemp	.12¼	@	.12¾
Java Sisal—			
No. 1 Basis	.10	@	—
No. 2 Basis	.09	@	—
New Zealand Sisal	.10	@	—
Sisal Lath Yarn—			
No. 1	.12	@	.14
No. 2	.10	@	.12
Manila Twine	.23	@	.28

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.04	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.07	@	.18
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	3.50	@	4.50
Southern Kraft	2.62½	@	—
No. 2 Kraft	2.62½	@	—
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.07	@	.07¼
White Tissue	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	45.00	@	—
Sheets	50.00	@	—
Boards, per ton—			
Plain Chip	27.50	@	—
Solid News	30.00	@	—
Manila Lined Chip	37.50	@	—
Patent coated	47.50	@	—
Container Lined—			
85 Test	50.00	@	55.00
100 Test	55.00	@	60.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.50	@	1.55
No. 1 Hard White	1.40	@	1.45
No. 1 Soft White	1.00	@	1.10
Ledger & Writings	.55	@	.60
Solid Books	.45	@	.50
Blanks	1.00	@	1.05
Krafts	.70	@	.80
New Kraft Cuts	1.15	@	1.25
Manila Env. Cuts	1.25	@	1.30
Ex. No 1 Manila	.90	@	1.00
Print Manila	.30	@	.40
Overissue News	.45	@	.50
Old Newspapers—			
No. 1	.45	@	.50
Mixed Papers—			
No. 1	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.26
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¾	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.09
Manila Sul., No. 1	.03	@	.05
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¼	@	.06
No. 2 Kraft	.03¼	@	.04¼
Southern Kraft No. 1	—	@	.03¾
Southern Kraft No. 2	—	@	.02¼
Common Bogus	.03	@	.04
(Delivered Philadelphia)			
News Print Rolls	46.00	@	—
Straw Board	32.00	@	—
News Board	30.00	@	—
Chip Board	30.00	@	—
Wood Pulp Board	70.00	@	80.00
Binder Boards—			
No. 1, per ton	73.00	@	75.00
No. 2, per ton	62.00	@	65.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1 50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.03½	@	.04
New White, No. 2	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01	@	.01½
Blue Overall	.03	@	.03½
Cottons—According to grades—			
Washable, No. 2	.01	@	.02
New Blue	.01	@	.02
Fancy	.01½	@	—
New Black Soft	.02	@	.03
New Light Seconds	.01	@	.02
New Dark Seconds	1.50	@	1.75

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.00
Miscellaneous	1.75	@	2.00
M. G.	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	1.00	@	1.25
Repacked	1.50	@	1.75
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.80

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	—
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	1.60	@	1.70
No. 2 Hard White	1.50	@	1.60
No. 1 Soft White	1.40	@	1.45
No. 2 Soft White	1.10	@	1.15
No. 1 Mixed	.50	@	.60
No. 2 Mixed	.40	@	.50
Solid Ledger Stock	1.00	@	1.10
Writing Paper	.65	@	.70
No. 1 Books, heavy	.55	@	—
No. 2 Books, light	.40	@	—
No. 1 New Manila	1.10	@	1.15
No. 1 Old Manila	.60	@	.65
Print Manila	.40	@	.45
Container Manila	.35	@	.40
Old Kraft	.85	@	.90
Common Paper	.17½	@	.25
No. 1 Mixed Paper	.20	@	.30
Straw Board, Chip	.20	@	.30
Binders Board Chip	.20	@	.30
Corrugated Board	.35	@	.45
Overissue News	.45	@	.50
Old Newspaper	.30	@	.35
Khaki Cuttings—			
No. 1 O.D.	.03	@	.03½
No. 2 Mixed	.02½	@	.03
Corduroy	.02	@	.02½
New Canvas	.03½	@	.04
New Black Mixed	.02½	@	.03

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05½	@	.11½
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¾
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	—	@	.04¾
No. 2 Kraft	—	@	.02½
(F. o. b. Boston)			
Southern Kraft	.02¾	@	—
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls	.009	@	35.00
Straw Board in Sheets, basis 35a to 70s	—	@	40.00
Filled News Board	—	@	30.00
Chip Board	27.50	@	—
Chip Board (Creasing)	27.50	@	30.00
Single Manila Lined Chip	—	@	37.50
Single White, Patent Coated News Board—Bender	45.00	@	55.00
Wood Pulp Board	70.00	@	75.00
Binder Boards	62.00	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Soft White	1.25	@	1.40
No. 1 Old Manila	.50	@	.60
No. 1 Mixed	.60	@	.70
No. 2 Mixed	.40	@	.50
Solid Ledger Books	1.20	@	1.40
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.60	@	.70
No. 1 Books, heavy	.55	@	.65
No. 1 Books, light	—	@	.30
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.50	@	.60
White Blank News	.85	@	.90
No. 1 Kraft	.70	@	.80
Manila	.80	@	.90
No. 1 Mixed Papers	.12½	@	.15
Print Manila	.30	@	.40
Overissue News	.35	@	.45
Old Newspapers	.30	@	.35
Box Board, Chip	17½	@	.20
Corrugated Boxes	.25	@	.30
Screening Wrappers	.25	@	.32½

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	.85
Domestic	.60	@	.70
Manila Rope—			
Foreign	—	@	1.37½
Domestic	—	@	1.60
Transmission Rope	—	@	.90
Mixed Strings	.25	@	.30
Jute Rope	—	@	.75
Jute Carpet Threads	.25	@	.10
Bleachery Burlap	1.75	@	2.00
Scrap Burlap	.50	@	.75
No. 1 Scrap Burlap	.65	@	.75
Scrap Sisal	.80	@	—
Scrap Sisal for shredding	—	@	.90
Wool Tares, heavy	.65	@	.75
New Burlap Cutting	.75	@	.90
Australian Wool Pouches	1.75	@	2.00
Heavy Baling Bagging	.90	@	1.10
Paper Mill Bagging	.30	@	.35
Bagging No. 2	.29	@	.25
No. 1 Burlap	1.75	@	2.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	—	@	.01¼
New White No. 1	—	@	.03½
New White No. 2	.02¾	@	.03¼
Silesias No. 1	—	@	.03
New Black Silesias	.02½	@	.02¾
New Unbleached	—	@	.04½
Fancy	—	@	.02½
Washable	—	@	.01½
Cottons—According to grades—			
Blue Overalls	—	@	.03¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03½
O. D. Khaki	.03½	@	.03¾
Corduroy	.02¾	@	.03
New Canvas	—	@	.05
B.V.D. Cuttings	.04	@	.04¼

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	1.50	@	1.75
White No. 2—			
Repacked	.02¼	@	.02½
Miscellaneous	.02	@	.02¼
Twos and Blues	.90	@	1.00
Thirds and Blues—			
Repacked	.75	@	.85
Miscellaneous	.70	@	.75
Black Stockings	2.00	@	2.25
Roofing Stock—			
No. 1	.40	@	.45
No. 2	.35	@	.40
No. 3	.25	@	.30

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.50	@	.60
New No. 1 White Shirt Cuttings	3.75	@	4.00
Dutch Blues	1.25	@	1.50
New Checks & Blues	2.25	@	2.50
Old Fustians	—	@	.75
Old Linsey Garments	.55	@	.65

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.09¾	@	—
No. 2 Sulphite	.07½	@	—
No. 1 Colored	.09¼	@	—
No. 2 Colored	.08½	@	.10½
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	7.15	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	10.00	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.00	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—
News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp
(F. o. b. Mill)

Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	48.00	@	58.00
Sulphate	50.00	@	—

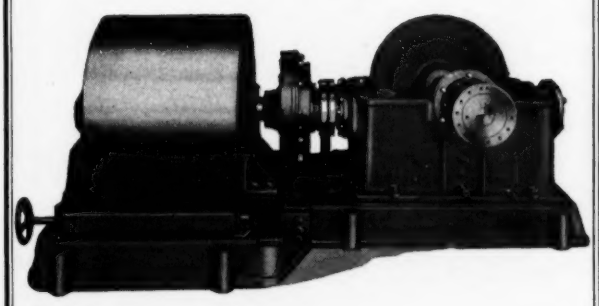
Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	1.80	@	—
Soft White	1.40	@	—
White Blk. News	1.25	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	—
Light and Crumpled Book Stock	.80	@	—
Ledgers and Writings	1.00	@	—
Manilas—			
New Manila Cut	1.25	@	—
Printed Manilas	.55	@	—
Kraft	1.25	@	—
News and Scrap—			
Strictly Overissue	.50	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	09½	@	.10
Fancy Shirt Cuttings	.06	@	.06½

HYPOID GEAR DRIVE STANDS



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PAPER TRADE JOURNAL

ESTABLISHED 1872

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SIXTY-FIRST YEAR

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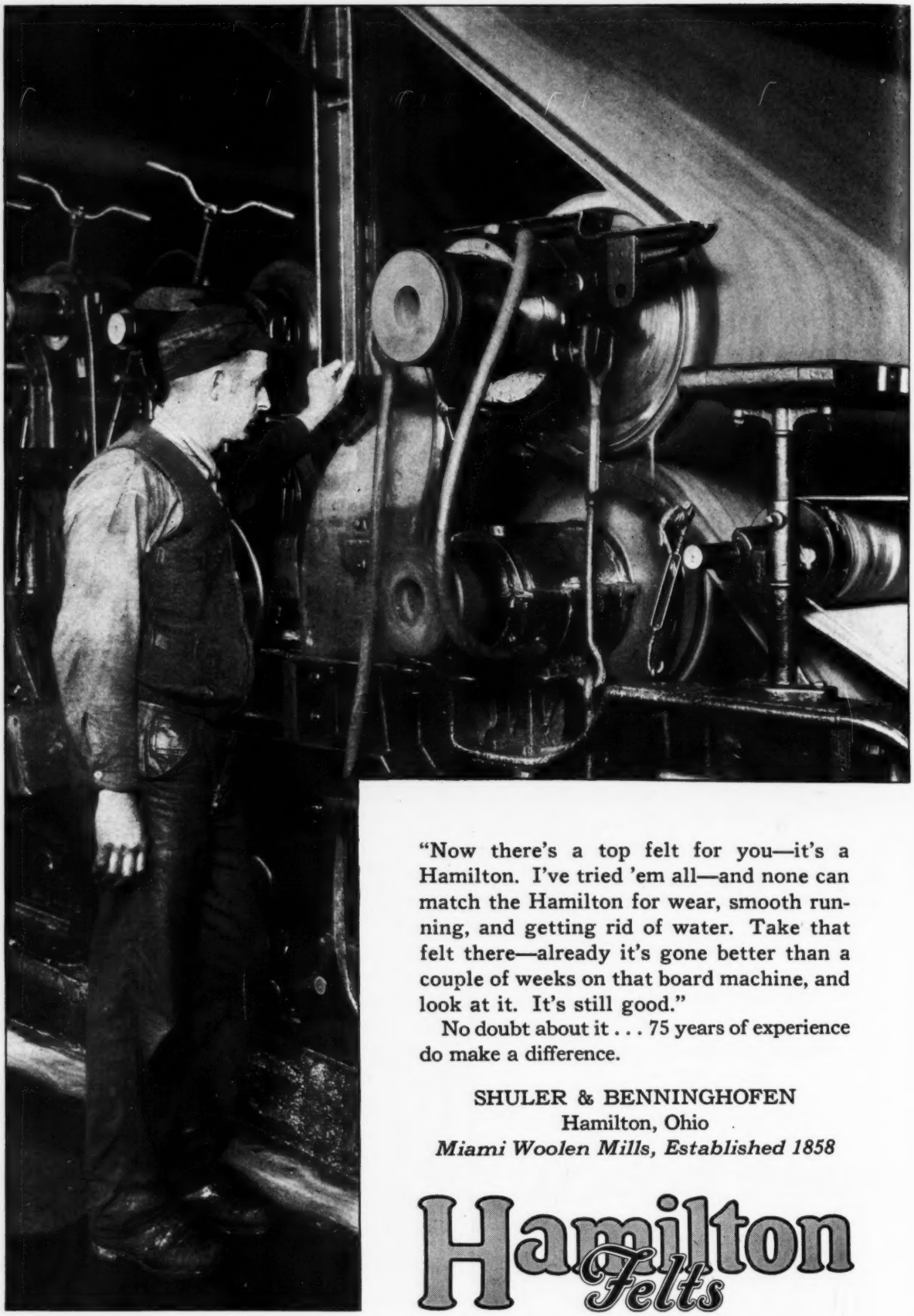

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